The Builder.

SATURDAY, JULY 22, 1854.

THE creditable efforts now making in England to disseminate taste through the country, and to give all classes the means of appreciating and understanding various branches of ornamental art, give a more than usual interest to the subject, and invite every inquiry that may bear upon it.

The practical views of the age have at length acknowledged the necessity of giving to all portions of the community the same means of educating the eye, and few will now deny the propriety of uniting the decorative with the useful in objects of every-day requirement. For what hope can there be of general improvement in the "arts of production," if those who create them are ignorant of the simplest notions of taste, and cannot even comprehend the beauty of a design if presented to them? It is not by the education of the higher classes alone, nor by the patronage of the great, that taste is to be spread through a country: they may *contribute* as far as in their power towards this object, and the efforts now making by men of rank and wealth are both creditable and useful; but for the community to be imbued with a feeling for art of any kind, the study must be general, and the minds of those who make, as well as of those who require, works of taste, must be imbued with a true appreciation of the beautiful. I do not, however, by this remark, wish to imply that men of rank and wealth, in England or any country, are distinguished above the rest of the community by correct taste: the few who possess it are the exception, and the exhibition of objects of their choice too frequently demonstrates an admiration for meretricious ornament and faulty design.

One great impediment to the cultivation of taste is the notion that beautiful designs are only to be found in expensive objects, and are therefore out of reach of all but the wealthy; and, indeed, when there are few capable of making good designs, the conclusion is not drawn without some show of reason, making it all the more necessary to remedy this impediment by a more extended art-education. For, as long as taste is confined to a few individuals, and not introduced into the ordinary ornaments and utensils of common life, it will continue to be almost an exotic plant, and a mere luxury. "Arts of production" can only be beautiful in proportion as they depend upon "arts of design;" and as beauty of form and proportion, exquisite detail, and high finish, were sought for by the Greeks in their vases, lamps, and other common utensils, so may our ordinary objects, whether intended solely for ornament or for every-day use, be made beautiful as easily as they are now generally hideous and misshapen. This depends on the mind that devises them; and to despair of giving to the commonest object an elegant design, is to acknowledge incapacity and want of taste. The same maxims laid down by Vitruvius for architecture apply to them:—1st. That they should answer the purpose for which they are intended; 2nd. That they should be durable, or of solid workmanship; and 3rd. That they should possess beauty: and every one without these conditions must be faulty and imperfect. But beauty is not to be obtained by capricious *ornament*, such as overloads so many of our modern productions; and unless the maker knows *why* the peculiar form, and all the ornamental accessories, are given to his work, any splendour of decoration which may merely delight the ignorant, will only be looked upon by men of cultivated taste with horror and disgust.

Taste, to be of use, must pervade all classes; and by this means, graceful and beautiful objects for every-day use will come into general demand, and be generally made.

They will also be obtained at moderate prices, and thus be placed within reach of all, instead of being confined to the wealthy few who happen to be possessed of cultivated taste. For it is not by making what is elegant dear to the purchaser that art and taste will flourish: this is an impediment, not an encouragement to them; and until good things are within the reach of all, and appreciated by the majority, it is vain to hope for excellence in any country.

I am, however, far from maintaining that the enjoyment of tasteful designs is even now *necessarily* limited to people of ample means; for many a simple and cheap object may be made in good taste, without any additional cost; and the humblest individuals may display an innate perception of the beautiful in the ordinary ornaments of a cottage, or in the coarsest materials. Owing, however, to the deficiency of taste in those who make articles of common use for sale, it is rare to find any that do not bear the stamp of utter barbarism; and there is little, indeed, to elevate the mind or correct the eye of the general mass. It is, therefore, absolutely necessary that all should have the mind and eye directed to the perception of what is good; and, unless taste pervades all classes, so that both the maker and the purchaser may possess that knowledge, the production of beautiful objects will depend on accident or caprice. The one may manufacture them, but the other will not desire what he does not appreciate; and it will be equally vain for the latter to possess a taste he cannot gratify. Besides, as Mr. Laing observes, "what employs the industry and ingenuity of the many is of more civilising influence on society than what employs the genius of the few;" and as "much wealth locked up in gold and silver ornaments is a sign of a low progressive social condition," so good taste may be possessed by a few, while the rest of the community continues to be unconscious of its beneficent influence. In that case it is a mere luxury, and it generally happens that, in a condition of society where it is thus limited, the search for objects of art is rather a caprice than a real taste. Luxury is the enemy of refinement, the parent of *rococo*, and of splendid monstrosities. For taste to last, and become general, its rise and progress must be simple and gradual; it must be sown and reared, and will never flourish by mere transplanting.

It often happens in this country, when an approach to good taste has been shown in the design of some common object, that it turns out to be the result of pure accident, a copy, perhaps, of something selected at random, which, as the maker (on being questioned) admits, had merely the recommendation of novelty, being an imitation of something hitherto not known in his particular trade. Besides this, the copyist frequently spoils the original by some capricious change of his own, introduced without any reason, totally at variance with its general *motive*, and with no other plea than a crude notion "of varying" (or if he has the vanity to suppose it, "of improving") what he should have left unaltered. Hence, if you praise one of these accidental works, or suggest an improvement in another, or censure a bad alteration already introduced, the unconscious maker is at a loss to understand the reason of the praise, the necessity of any change, or the merits of the censure; and then, in order not to appear ignorant in the matter, having invited your admiration to some other object of the most unmitigated barbarism, he at once proclaims how pure an accident it was that led him to copy at all from a good work. You turn to another, and make a remark about its deficiency in a certain part, which has probably been one of his own "*improvements*;" when he thinks at once to overwhelm your objection by "The original, sir, from which that is copied, was found at Pompeii;" and remains fully persuaded that you know nothing about the matter. For to be found at Pompeii is his criterion of excellence; and his incapacity for judging prevents its occurring to him that, even if exactly the counterpart of a Pompeian model, it may still be faulty, even without the several *improvements* the work has been doomed to undergo during its transmutation from the ancient model to the English copy. Utterly ignorant *why* one thing is good, another bad, or how small an alteration may spoil the whole effect of the best work, these people still have preconceived notions; and it is curious to listen to the crude and fallacious dogmas they may have laid down, or borrowed from some worthless authority about the principles of beauty and form.

Among the many instances of this I will mention one, which though accustomed to their want of taste, I scarcely expected in a man engaged for so many years in the manufacture of works of ornamental art. It was while looking over his vases, that the form of one of them came under discussion, and led him to expound his views on beauty. A ponderous folio filled with well-executed drawings of every kind of vase, from the best and worst models, lay upon his table, showing that neither time nor trouble had been spared in making the collection; but when he pointed out the bad as models of perfection, it was evident that neither the possession of accurate copies of so many different works, nor the habit of selecting from them, had given a proper direction to his taste. He had no perception of *beauty*, but he had his own view of a *theory*, and every thing was to bow to his crude ideas about "flowing lines." A Greek cylix was, therefore, pronounced by this criterion to be the *ne plus ultra* of bad form, because "the bowl being so nearly at a right angle with the foot, the lines could not flow." His test of excellence was illustrated in the outlines of cups of this form, and the abrupt

contrast of lines in the Medici and similar vases was severely censured.

A visit to another artist in this line led to a different result. The fault was not in the maker, but in the public. He had copied, with the judgment of a man of taste, the most beautiful Greek vases, and had introduced upon them the graceful and classical designs of our ill-appreciated Flaxman; and any one might have expected that the growing desire for objects of good form would have ensured their sale and encouraged his efforts; but going one day to give him an order for another tazza, I found his shop crowded with the most tawdry, ill-proportioned vases of a different manufacture, each looking as if, while still in a plastic state, it had been pulled up by the neck to increase its length. "What," I asked, "has made you give up good things for bad ones? Have you abandoned all that was in proper taste for a new caprice, or did you only make good things by chance?" "It is not *that*," he said; "these things sell, and I must live; I can find plenty of purchasers for them, and few for the others." What could be said? It was the purchaser here who wanted taste; and as long as the public is deficient in it, vainly indeed may the manufacturer possess it. "But why not," I asked, "have them of good proportion, why so elongated beyond all reason?" "This," he said, "it is out of my power to prevent. I buy them; they are made by others, and I must take them as they are; for they are sold *by the height, at so much an inch!* and to

require the height to be diminished in accordance with the breadth would only be considered a *ruse* to decrease the price." And yet these profess to be objects of ornament and taste!

"Why," I remarked to an Italian, "do you not make copies of such and such beautiful objects so justly admired in Italy? you would find many to purchase them, and you would do good by causing them to be generally known." "I have already made several of them, but they did not sell, and now I confine myself to those that do;" and then showing me some of most commonplace ornaments, he said, "These I can always sell, and I have a family to support." Among them were dogs, and flowers, Canova's three lanky graces, and elongated vases equally deficient in proportion, form, and decoration.

And now having mentioned an Italian, I cannot abstain from acknowledging the debt we owe to the poor "image men" who wander through our streets; for I have no hesitation in saying that they have done more to improve the general taste, to place copies of known sculpture within the reach of all, and to familiarise the eye of the English public with what is good than any school (which a few only can attend), than any gallery (which the working classes seldom use), or any institution in the country; and when we recollect that English art paraded (without shame) through the streets was confined to cats with moving heads, green parrots, wooden lambs covered with cotton wool, or (if the figure of a man was attempted) a coarse boor holding an equally vulgar pot of beer; we may feel grateful for the change, so unostentatiously brought about by these humble foreigners.

The taste, indeed, of many English who pretend to judge of art too often leans towards the mere matter-of-fact representation, both in statuary and in painting; and while the ancient Greek or the modern Italian would give his first sign of genius for art by selecting an object of graceful form, or by giving to the figure he moulded an exalted ideal character, English talent would manifest itself and obtain applause by the mere imitation of humble life in the figure of an ordinary peasant, or some graceless scene of common life.

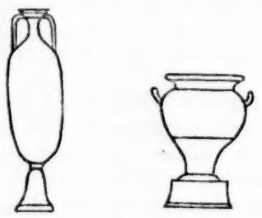
It is hopeless for any one who has a real appreciation of the beautiful to seek for some object of good taste among the articles of use or ornament he purchases for his house, or to urge on the persons whom he employs to make them for him, the necessity of carrying out his suggestions, as long as they are incapable of understanding them. And how is this to be wondered at, when they are unconscious of proportion, form, beauty of outline, colour, adaptability of materials, and of the many conditions essential for excellence in design, destitute of the means of obtaining a knowledge of the subject, of guiding and improving their judgment, and of discriminating between good and bad? It were a miracle if men without the opportunity of understanding an art should succeed in practising it; and how, unless shown what to avoid and what to admire, can they form their taste?

And here I feel a pleasure in paying a just tribute to the good judgment which adopted this mode of proceeding at Marlborough House. For it is by the *negative* rather than the *positive* process that instruction is conveyed to the untutored mind in the most intelligible form; and when any one has to choose one out of twenty objects, it is far easier to make the selection if he begins by rejecting those he will *not* have, than by at once attempting to fix on the one he prefers. Let him rather say, "this I will *not* have, nor this, nor this," until he has reduced the number to two; and his final choice is even then more easily made by rejecting one of them, than by trying to decide on the best. But while I fully approve of the mode of instruction by showing what is *bad*, and *why* it is so, I must admit that a "chamber of horrors" should not be confined to one, but should include (under different gradations of censure) *every* room, except a very small *sanctuary*, privileged to contain a few really good specimens; and however gratefully I would acknowledge the condescension and the public spirit of any great person who sends objects of art to an exhibition, I would only commend and draw attention to such as are *worthy* of being imitated, and exclude those that are deficient in taste from the recommendation that they are "sent for study;" and where so little good is made, and where few can be expected to possess perfect specimens, or even perfect taste, no sensible person could be offended at such an exclusion.

It is of the highest importance for creating and improving the taste of the public that good designs should be constantly before them. Even those who are gifted naturally with a certain amount of it are liable to have it vitiated by frequently seeing bad models; and a more cultivated taste is occasionally warped and led insensibly towards the extravagant if, debarred from the contemplation of the beautiful, it has faulty designs constantly before it. Many again allow themselves to be deceived by the fiat of men whose names are thought to give weight to their opinion; and it is thus that some who might have arrived at a just appreciation of colour have had their judgment warped by reading the plausible theories of people totally ignorant of the subject, but not the less positive in their opinions. Nothing, indeed, is more likely to mislead than a theory propounded before the subject itself is understood: it is like the attempt to write a grammar before the language is known; and the theorist would do well to remember that languages were spoken long before grammars were invented. It is better to wait till colour is understood before theories respecting it are laid down; and had this been done, the blunders that have been propagated by a fallacious notion about accidental colours might have been avoided.

If those who have some kind of perception of the beautiful are misled, how hopeless it must be for the great majority who are destitute of this advantage to arrive at any knowledge of it without proper direction. Indeed, cultivated as was the graceful mind of the Greeks, we even find their taste sometimes failed to be correct, as in some parts of their beautiful vases, especially in the handles and the foot;

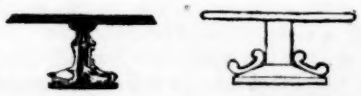
and some of the later ones of Apulia are wanting both in form and proportion; while many have the fault of elongated shape, so frequently found in those of modern Europe. And



though the drawing of the figures on the Apulian vases is remarkable for freedom of execution, the composition has not the same purity as on those of the age of Alexander, and the introduction of numerous figures on the same field, and a greater luxury of ornament, proclaim the decay of real taste, and the approaching downfall of art. It is this want of proportion that spoils the generality of the richly coloured glass vases of Bohemia; showing that the skill of the makers in the manufacture of the material far exceeds their taste and correctness of eye. And if really intentional, and not an accidental caprice, it is probably owing to some preconceived notion about height giving lightness and grace, which may easily mislead a person incapable of *feeling* the beauty of symmetry.

The Greeks generally excelled in the appreciation of form and proportion; and such was the beauty of their designs, both in small objects and on a great scale, that no people have ever approached, much less equalled, them. And even in the early infancy of their art we may trace the tendency they already had towards the perception and the practice of the beautiful. They had also this great advantage, that men of first-rate talent were ready to aid in the production of objects in common use; as was the case in Italy also during the flourishing periods of art; and it is of the greatest importance that industrial art should have the benefit of such assistance. Nor were they above adopting from those less refined than themselves, whatever hint could be obtained from their particular style of ornament: beauty was beauty to them wherever it was found; and it only remained to adapt it to their own wants in the most suitable way. If the advantages arising from this real feeling for the beautiful were better understood at the present day, we should not have decorative art left to the accidental caprices of a mere decorator, and depend for those articles of use which ought to be ornamental upon the misguided fancy of an uneducated mechanic, nor should we have the misshapen glassware, the hideous lamps, the monstrous tea-urns, or the whole furniture of our tables and of our rooms, that disgrace our civilization. But talent will be rare among designers so long as few are able to judge of the effects of their own compositions, or have any notion beyond "copying from the antique," *because* "it is antique," without entering into the true feeling of the original, or understanding in what its beauty consists. One therefore designs a cup or a tazza, and thinks he has produced a real "Pompeian article," *because* he has put together a certain number of details; totally unconscious that a mere repetition of ornament is not a design, and that the whole when finished, having no *motive*, is utterly unmeaning. This putting together a number of parts to form a whole is indeed the besetting sin of incapable minds, and is too often witnessed in the productions of architects as well as of those who make ornamental models; and instead of the building or other work being conceived in the mind as a whole, of which the details are the necessary accessories, each part is added in order to *complete* the design; and as there is no keeping and no necessary connection between them, many a one is removed, altered, or varied without any reference to the general composition.

In the furniture of our houses examples of similar additions without an object, either for ornament or use, are abundant. Of such a kind are tables with geese or swans striving to thrust their necks against its central pillar, with no apparent reason unless to turn their less graceful tails to the company, and serving no more purpose than the wooden scrolls of another, that seem to have fallen on their backs upon the plinth.



It has been said by Pliny, that the Greeks combined the forms of several beautiful women, in order to constitute a perfect model; but the notion of this compound figure is such as a Roman might, but no Greek artist of real talent would, entertain. The latter would form in his mind the conception of perfect beauty, more perfect than he might find in one individual; but he would not put together the material parts of different figures to create it; and such a *construction* of a statue would imply an utter deficiency of genius.

The Apollo and the Venus were not so formed; and it would be as unreasonable as to combine the parts of several faulty buildings to create a perfect structure.

It is not only to a deficiency in the artist who executes it that is to be attributed the blame of a faulty work: this, as I have shown, is as often to be laid to the charge of the public or of the private employer; and when the model of a monument, or any work of art, is proposed by a designer who has real talent, it is not impossible that the *committee* assembled to pronounce upon it may be incapable of forming an opinion on the matter. Thus it happened that an architect of real talent, when requested to give a design for a certain building, was obliged to bow to the decision of an ignorant committee, because they had a preconceived notion that a particular feature was required for every large edifice. Nothing would persuade these worthies

that a grand front could exist without a pediment with figures in the tympanum, whether it was Gothic, Elizabethan, or of any other style. In vain the architect represented that in the particular one he had chosen for the building a pediment would be a monstrosity; that buildings with large roofs, like the Tuileries, or the town-halls of Flanders, had no place for a pediment; and to have both roof at the top and gable beneath it would be inconsistent. It was useless: they would not pay their money without one, and it was to be introduced somehow in the most conspicuous position. And thus the reputation of an architect was to suffer for the caprice of ignorant people; whose paradox amounted to this, that a man ought to appear with one hat below his chin, and another on his head.

And *who* was the committee? or *who* is any committee? It has been said of committees, as of other boards, that they "have no consciences:" it may be said with equal justice, that they have no individuality; for when a decision is come to by a committee, *who* has decided? no one knows; and no one is responsible for it. The principle is an unsound one. There is no objection to a committee of *consultation;* but every decision ought to be pronounced by *one* person of sound judgment, who should be, and feel that he was, *responsible;* and any one who knew that he would have to answer for a hasty or improper opinion, would take care to obtain and follow the best advice, which, too, need not necessarily be confined to that of his official coadjutors. Make a man *responsible*, and he will take means to find out what is best; and the simplest mode of selecting him would be by ballot among the members of the committee itself, who would thus be relieved from the too common habit of giving way to some troublesome, overbearing, member of their body, who, being the most busy and tiresome in the inverse ratio of his talents, gets his own way, in opposition to less assuming and more capable men.

And how are committees too often formed? Some members are chosen because their reputation pronounces them to be well informed, perhaps on this, perhaps on some other, subject; some because their incapacity is overbalanced by a sounding title; and some for various reasons, which may or may not be valid; while many of them, when appointed, do not attend at all, and none are responsible even if they do. Hence we may pronounce this verdict, when their decision is bad; that sums of money have been thrown away, and the taste of the country degraded, by the doings of "*some person or persons unknown.*"

What undertaking that requires a head could be expected to succeed under, what army could be commanded by, such a council? and in a country where the necessity of a chief is acknowledged by its institutions, it does seem rather inconsistent to leave questions of importance to the chance decision of numerous individuals, without a *responsible* president.

Impediments of various kinds stand in the way of our general progress towards taste, and these require first to be removed. Museums are of the highest importance for the instruction of the public; that the manufacturer, the artizan, and the working man may have easy access to objects of art. For it is not by the accidental appreciation of it among some individuals, that taste of any kind will flourish, or become general in a country; and the arts of production being of elegant design, is a far surer criterion of its being spread through the community, than the most beautiful objects seen in the mansions of the rich. Ere the public can appreciate works of art, they must acquire a true feeling for the beautiful wherever it is found; otherwise they may mimic and echo the approbation of acknowledged critics, while their judgment will be crude and uncertain; and it is to be regretted that the habits of waiting for the opinion of some other person, before they express (not to say form) their own, is not unusual with the English. The great Exhibition of 1851 had therefore, among its many beneficial results, the good effect of obliging them in some measure to judge for themselves, since the variety of objects, and the want of a ready counsellor, made it difficult to obtain any other opinion but their own. Their decision, it is true, was not generally the best, or the most refined; and some natural objects, as the "Boy with the broken drum," the "Dog defending the child from the serpent," veiled statues, and commonplace, unelevated subjects, were their favourites. They perceived in them a resemblance to what was real; but they did not understand that such subjects present no idea fit to be commemorated in a material, and with a skill, that belong properly to high art. Yet the effort of judging had its effect; and a still better opportunity for correcting the ordinary taste is now afforded by the varied collection of the Sydenham Palace.

The want of museums in our manufacturing and other provincial towns has been a great evil; and the few established there have been so deficient, that no notions of art, or correct taste, could be obtained from them. Hence the English manufacturer, or the decorative artizan, has long been in the habit of borrowing designs from France, the beauty of which is only comprehended by him, because he finds they have been approved in the country of their birth. It is not *his* choice that teaches him to admire or adopt them, and he only appreciates their merits in proportion as they "pay." Nor is this to be imputed to him as a fault, for he cannot acquire taste when his eye is uneducated; and his inventive genius, if he has any, finds nothing to direct or develope it. The English, indeed, are particularly in need of such instruction: and the readiness with which artizans and others seek to profit by it when offered to them, is shown by the published "Report of the Department of Science and Art." It is, therefore, with great satisfaction that we hail the establishment of schools in various parts of the country, for primary instruction in drawing, and the means afforded to masters for studying at the central institution in Marlborough House, preparatory to their taking the management of provincial schools. But this is not all that is required to give *general* taste. All cannot and need not draw, though all should be able to accustom their eyes to see and appreciate what is beautiful; and this can only be done by large *public collections*, and the constant contemplation of well-selected objects of art.

The schools of drawing, and the liberal manner in which books and useful models are offered for the study of artizans, as at Marlborough House and other places, as well as the admirable lectures to which students may listen, cannot fail to operate satisfactorily; and even in some country towns the energy and exertions of individuals in forming annual exhibitions have done good service; but these laudable efforts are partial and small compared to the mass of the population, who have not the same means of visiting objects of good taste that is afforded to the working classes of Italy, France, Germany, and other parts of Europe. Indeed, it would be a miracle if a people, not naturally imbued with an appreciation of the beautiful, should possess that quality with so few opportunities of acquiring it.

These classes are by their employments debarred during six days in the week from visiting our museums of art; and the Crystal Palace at Sydenham, which is expected to be the best means ever offered for instructing them, is to be closed on Sunday. How then, with the British Museum, Sydenham Palace, National Gallery, and every other collection, closed, is it *possible* for our people to obtain any knowledge of things they have not the means of seeing? Nothing short of inspiration can make them appreciate works of art so carefully kept from them; and the eagerness with which they *do* visit such objects, when they have the opportunity, is plainly shown by the crowds that press to the British Museum at the Easter holidays. But an occasional visit after long intervals will not instruct the eye, nor accustom it to works of art; and if men who are working for their livelihood were to give up a day's wages every now and then to study art, we should indeed look upon them as more deeply imbued with the love of it than any Greek of ancient, or Italian of modern, days. How they are to arrive at that love of it would be difficult to explain; but certain it is that no one could expect either an inspired possession of it, or that they will sacrifice their wages to obtain it. In reply to this, some may answer, "Sunday is not a day for sight-seeing; it is a day of rest:" and so it is of rest from *labour;* and those who have other six days to instruct themselves and divert their minds, need not then visit any collection of art. They may or they may not; though many a rigid talker scruples not to do so when abroad. It is the working man, who has six days' confinement, for whom an innocent and useful recreation is wanted; and we should not "strain at a gnat and swallow a camel," by leaving the gin-palace open to him and closing institutions which would lead him to select and indulge in better pursuits.

Others again imagine that it would interfere with church service; but this would be obviated by not allowing a gallery or museum to be open till after two o'clock; and if it is not discovered that the great encourager of crime, the gin-palace, interferes with the church, it is difficult to understand why the contemplation of humanising art should do so. Such improvement to the mind is not like the mere love of amusement or excitement, as at a theatre; and indeed from this last no one is excluded by business or work during the evenings of the other six days; nor should the excuse of want of refreshment be permitted to sanction any buying and selling; and at the Sydenham Palace all that is for sale should be shut up as as in a shop. The opposition to the Sunday opening of museums of art is not surprising; for what useful innovations were ever proposed in England without it, from public coaches, machinery, steamboats, railways, and the rest, down to Minié rifles? And it requires years and years to get rid of a Smithfield-market, intramural interment, or any other nuisance. Great hostility was even shown to Sunday schools, when in 1781 they were first established for instructing those in humble life in the usual routine of education. It is therefore only consistent that *this* Sunday school for another improving branch of instruction should be opposed; but the time will come when a more practical generation will wonder at our blindness, which might be an innocent one if it did not commit an injustice.

Nowhere is wholesome recreation so much required as in England, where the frequent occurrence of wet weather so often prevents the working man from seeking it in the country, and drives him to idle amusements and to drink. For it is folly to pretend that men who have been working six days will not seek, and do not require, some kind of recreation; and if a good one is not provided for them they will too frequently be tempted to what is bad. So far from tending to irreligion, it will make them less animal and more intellectual, consequently, more soberminded and religious; and we shall do better to provide a remedy for ignorance and drunkenness, than persist in their encouragement.

Shut the gin-palaces, and give the people innocent recreation and instruction; you will then confer on them a benefit, and will discover that Englishmen are not worse than French or Italians, nor less Protestant than the Prussians of Berlin; while you will find them less drunkards than they are now, and capable of understanding what you expect them to see, without having it presented to their sight.*

GARDNER WILKINSON.

POETIC SCULPTURE.

WE have lately viewed with much gratification a monument by Mr. J. Edwards, sculptor, to the memory of the late William Hawkins, esq. and Mary, his wife, about to be erected by their sons, one of whom, Mr. W. Warwick Hawkins, is the member for Colchester. It includes a figure of Hope, in high relief, the size of life, with an anchor and the Bible by her feet, and a vase at her side, inscribed *Mors est janua melioribus vitæ*, and bearing, amongst other emblems, the monogram of our Saviour, the poppy, the cocoon, from which the butterfly is escaping (the soul quitting its earthly habitation), and the Egyptian winged globe, the symbol of eternity. On the Anchor will be

* To be continued.

found, "It is good that we should hope," "Hope is the anchor of the soul," "Hope to the end." Above the upturned head of the figure, which is surmounted by a lambent flame, is the morning star, and the dispelled clouds, shown on the tablet forming the background, give a slightly indicated "glory." The work is remarkable for pure devotional feeling, and is most carefully and delicately finished.

In the studio of Mr. Edwards we saw several other very charming designs of elevated character, enough to convince us that if he receive proper aid, we may look for some fine works from this gentlemen. We give part of his own description of a sketch purporting to represent a philosopher directing the attention of a youth to the precept "know thyself," inscribed over a niche containing a bust of Thales, the great father of ancient philosophy, and author of the precept. "It is designed," he says, "to foreshadow some great *future* philosopher rather than represent any one of the *past* time—to foreshadow a venerable man in whom true wisdom, knowledge, and goodness, will happily meet together and glow with an intenser, brighter radiance than they ever have or ever could, perhaps, in any one even of the most illustrious in the by-gone historical period—a man in whose large clear mind all the higher sciences, when far more perfected than they are at present, will find an ample and a fit abode; and whose large heart will direct all their concentrated light to bear upon the above fine old precept of Thales, for the purpose of dispelling the prejudices and ignorance which have long darkened the minds of so great a number of mankind, and for the purpose too of infinitely increasing their comforts and happiness by the multiform means proceeding from a true knowledge of themselves—a knowledge of all the laws, mental, moral, and physical, whereby the Incomprehensible regulates the human family in the shadow stretching from the cradle to the grave."

Truly as Plato writes,—"To know oneself is wisdom." It is less easy to assent to the *dictum* of Xenophon (as quoted by Mr. Edwards), "By knowing yourself you will pass your days in happiness."

There is another sketch with which we were more particularly struck,—"The Weary Reassured." The worker has fainted in his well-doing,—doubting the usefulness of further effort: the question, "What's the good?" has prostrated his energies and saddened his heart; when, Lo! a solemn vision, "Telling of things," as Milton sings, "which no gross ear can hear." The idea is admirable. There is the right stuff in Mr. Edwards, or we are much mistaken, and we cordially wish him the means of achieving the success he is capable of.

THE LATE MR. J. C. CHRISTOPHER, DISTRICT SURVEYOR.

IT is with deep regret, in which many of our readers will join, that we have to record the death lately of Mr. James Charles Christopher (of the firm of Garland and Christopher), who had held the office of district surveyor of the parish of Hammersmith, Middlesex, from the date of its first creation. The circumstances out of which grew a result so calamitous were briefly these:—It appears that the deceased had left London by a late train on Thursday evening in last week, and that after partaking of a hospitable entertainment given to the gentlemen forming the committee of the District Surveyors' Association by Mr. Gutch, at Greenwich, he proceeded on his journey, with the intention of joining his brother, first lieutenant of the *Lizard*, to witness the embarkation of the French troops at Calais, destined for the Baltic. While on this fraternal mission, and as his brother's vessel, the *Lizard*, was nearing the *Algiers* line of battle ship, her top-mast got foul of the yards of the *Algiers* and snapped; and the falling spar in its descent on deck struck the back part of Mr. Christopher's head, and caused his almost instantaneous death. The high spirits the deceased was in up to the very moment, it might be said, of the accident casts an additional shade of melancholy on an occurrence which has deprived the profession of an energetic and much-respected member, and his immediate circle of a warm-hearted and zealous friend. His untimely loss points a moral we should all profit by. Many will echo our words when we say with real sorrow,—poor Christopher!

THE PROPOSED OXFORD UNIVERSITY MUSEUM.

To increase the value of the collections illustrative of natural history, and to aid the school of natural science in the university, it is thought desirable that a general university museum should be formed with distinct departments under one roof, together with lecture-rooms and apartments for the use of professors, and working rooms for the students. Designs have been accordingly advertised for, and a statement of the requirements prepared.

It has been determined that this museum shall be a building of two stories in height, in the form of three sides of a quadrangle, and the area covered in by a glass roof; the fourth side being so adapted as to admit of extension of the building at some future period.

With the exception of Mr. Hope's entomological collection, for which special apartments are to be assigned, it is proposed to distribute the collections illustrative of the several departments of natural history through the area on the ground floor, and in galleries, and to arrange the lecture-rooms, sitting-rooms, library, work-rooms, &c. in the three sides of the quadrangle. The ground on which it is proposed to erect the museum is an area of four acres, nearly square, at the south end of "the parks." It is nearly level, and has a frontage in every direction. The building, from the nature of the site, will be visible from all sides. A carriage-road runs along the west and south sides, and a public path along the east.

The departments for which accommodation is required are as follow:—Medicine, anatomy, zoology, geology, mineralogy, chemistry, experimental philosophy, natural philosophy, astronomy, and geometry.

The delegates have offered a first prize of 150*l.* a second of 100*l.* and a third of 50*l.* But if convocation decide that one of the plans to which prizes are adjudged be carried into execution, the premium will not be paid to the architect employed. No plan will be entertained of which the estimated cost exceeds 30,000*l.* Can the building required be obtained for this amount?

THE PARIS UNIVERSAL EXHIBITION OF 1855.

IT was our privilege to give the first illustrations of the buildings erected for the International Exhibitions in England, Ireland, and America, and we are glad to maintain our position by publishing to-day a transverse section of the structure which is now in the course of erection for the Paris Universal Exhibition of 1855. In a previous number (p. 158, *ante*), some particulars of the construction will be found. It is of stone externally, and the contract was taken by Messrs. Goldsmid and Co. at 11,327,000 francs. M. Viel is the architect. There will be two wings, which will cost 6,000,000 francs more, and various temporary buildings. The main structure now illustrated is a parallelogram in three spans, about 820 feet long and 354 feet broad. The width of the centre span is 157 feet, and the height in the centre 108 feet. The gallery will extend over the whole width of the side divisions, about 79 feet.

The Exhibition will commence on the 1st of May, 1855, and will close on the 31st of October, in the same year. Articles for exhibition, whether French or foreign, will be received only through the committee of the department or country which the exhibitor inhabits. The list of those who are admitted must be sent to the Imperial Commission by the 30th of November next, at the latest.

We would especially point this out to such of our countrymen as are disposed to assist in carrying out the wishes of her Majesty and the Government. They should at once signify their intention to the respective committees, and state what amount of space they will require. Unless this be done, our Board of Trade Department of Science and Art, to whom the arrangements have been entrusted, will be unable to obtain such accommodation for Great Britain and Ireland as is desirable.

Objects to be exhibited will be received at the Exhibition Palace from the 15th of January to the 15th of March inclusive.

"Considering," as the decree says, "that one of the most efficient means of contributing to the progress of the arts is a Universal Exhibition, which, by throwing open a competition amongst all the artists of the world, and by placing so many various works in face of each other, ought to be a powerful motive to emulation, and present an occasion for fruitful comparisons,—

That improvements in manufactures are closely connected with advancement in the Fine Arts,—

That, nevertheless, the exhibitions of industrial products, which have been hitherto held, have admitted the works of artists in only a very insufficient proportion,—

That it belongs especially to France, whose manufactures owe so much to the Fine Arts, to assign to them in the coming Universal Exhibition the place which they merit,—

A Universal Exhibition of the Fine Arts will be held at Paris, at the same time as the Universal Exhibition of Industry."

Inventions not patented will be protected. Rewards will be given by a great international jury, divided into thirty special juries, corresponding with thirty classes named. The following are the special arrangements for the Fine Arts:—A French jury, instituted at Paris, will decide on the admission of the works of French artists. The members of the French jury of admission will be nominated by the section of the Fine Arts of the Imperial Commission. The jury of admission for the Fine Arts will be divided into three sections. The first will comprise painting, engraving, and lithographic works; the second, sculpture and die-sinking; the third, architecture.

Each of these sections will decide with respect to works belonging to its special department. The exhibition is open to the works of all French and foreign artists, alive on the 22nd of June, 1853, the date of the decree which constitutes the exhibition of the Fine Arts. Artists can present to the Universal Exhibition works which have been previously exhibited; but there cannot be admitted—

1st. Copies (excepting such as may reproduce a work in a different manner, on enamel, by drawing, &c.)

2nd. Pictures and other objects without frames; and

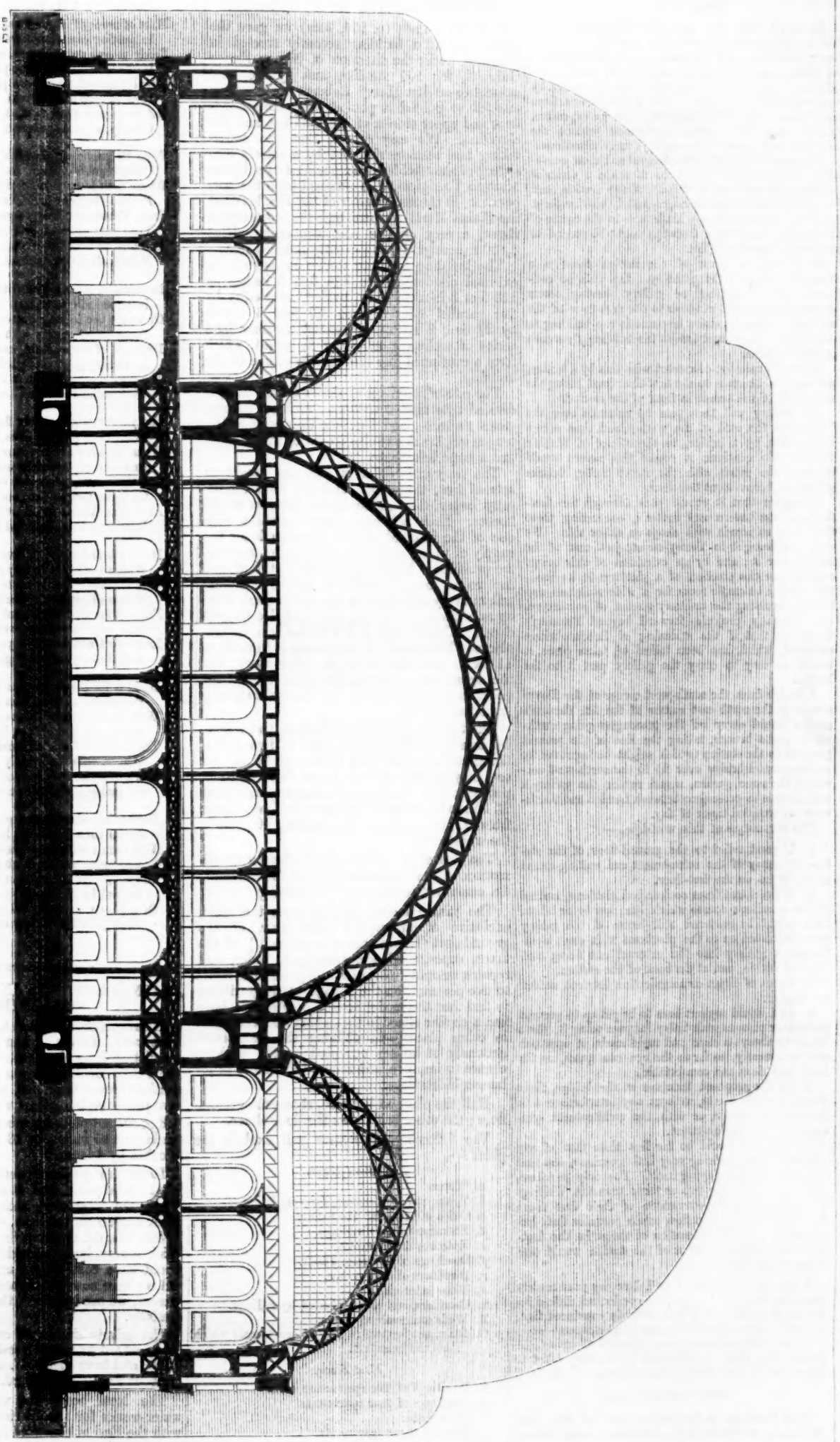
3rd. Sculptures in unbaked clay.

Liberal and kind-hearted hospitality is promised to all foreigners.

Our Government Department of Science and Art, we may here mention, have given notice that forty prizes of the value of 8*l.* are to be awarded to those students, under the Department, throughout the kingdom, who take medals in the greatest number of stages in each of the exhibitions. Twenty prizes are to be awarded in the autumn examination of 1854, and twenty prizes in the spring exhibition of 1855; and these prizes are to enable the most deserving students to visit the Paris exhibition. Each student will be required to make a written report of his observations on that exhibition.

A meeting of the Institute of Architects was held on the 17th, when the committee appointed by the Board of Trade, with reference to the Paris Exhibition — Messrs. Cockerell, Donaldson, and Scott—made an exposition of their views, and invited suggestions. Mr. Redgrave, R.A. attended to give such information as might be needed. It was ultimately resolved, "That this meeting desire to express their concurrence in the objects of the Exhibition, and that the members of the Institute will individually advance its purposes by every means in their power."

It seems difficult to define what will and what will not be admitted: this must be left in a great measure to the committee of selection, which will, we suppose, be formed.



SECTION OF BUILDING FOR PARIS UNIVERSAL EXHIBITION.—M. VIEL, ARCHITECT.

THE APPROACHES TO LONDON BRIDGE STATION.

No one, I think, who has noticed the approaches to London-bridge Station during the past few weeks can doubt that some very increased accommodation must be given, especially to pedestrians, who are, in the afternoon, much inconvenienced at the crossings by the multitude of carriages waiting for parties from the Palace. To extend laterally will be expensive, besides that every such enlargement widens the crossings, and renders the pathways more circuitous.

It appears to me that the cheapest and most convenient mode of relief would be to make a series of footways *through* the first-floor of the station, and *over* the crossings and carriages, and I think without anything unsightly or any hindrance to the traffic of the streets, these raised footways might be carried to the foot of London-bridge.

All round the front of the station there is a verandah covering the pathway. Let this be converted into a balcony or gallery, having access through the present windows to the first-floor of the building. Then let stairs be made *in* the building *to* each ticket station, and *behind* the building *from* each arrival platform.

A similar balcony, connected with this by a bridge, will have to be made on the first-floor level along the south side of the arcade in front of the station.

The gallery will then pass on columns over the footway to the wall of the station, and then across Duke-street, by a bridge, to the corner of Wallis's Tavern. To continue it *round* this tavern would interfere too much with the street traffic, besides giving an inconvenient terminus.

I propose that it should pass *through* the first-floors of the tavern and hatter's, converting these floors into an arcade with shops on either side. We thus are brought to Tooley-street, just east of the bridge over it; and by an extension of this bridge eastward, or the erection of a platform to its level, there would be ample room for a wide staircase and landing, avoiding the ordinary stream of passengers. The hat-shop projects forward beyond Fenning's Wharf, so that if the widening of London-bridge eastward, which has been talked of, takes place, it would be easy to carry the gallery past it to the bridge.

A bridge from the south-west corner of the Dover station to the north-east corner of the St. Thomas's garden would carry off the passengers going southward; and a branch, taking the line of the present gateway to the station (which might be improved by an ornamental bridge over it) to the north-west corner of the same garden, would render the gallery a convenience to passengers between London and Southwark, at crowded times of day.

The advantages of this would be,—

1. A great relief to the ground-floor of the station, as many of the refreshment and waiting-rooms might be put on the first-floor.

2. A direct exit from each arrival platform, instead of the circuitous course which has now to be taken. This might be rendered still better if the gallery were continued on to the platforms with steps at intervals, a gallery like the external one being constructed within, and at the back of the station.

3. Means of direct communication between station and station.

4. As I would suggest bars to be put up to prevent porters or persons with bulky luggage using it, there would be always a clear and rapid mode of approach and exit, nearly, so far as the eye can guess, on the level, and clean and comfortable.

5. By the proposed terminus at the bridge, there would be ready access, without any interference with the ordinary public, or with the architectural symmetry of Wellington-street.

6. The cost would be far less than that of any other plan, as involving very little purchase, and that probably almost repaying itself. The only purchase, indeed, would be the two or three houses in Wellington-street; but the conversion of their first floors into shops would doubtless much increase their letting value; and the formation of shops in the first-floor of the arcade in front of the station would also increase its value.

I am not an architect, as I dare say your readers may discover, and I may have overlooked difficulties or impediments; but I feel strongly convinced that, at least so far as the conveying of passengers—especially arrival passengers—*over*, instead of *round*, the station, this plan would be an incalculable relief to them, and to the officials of the station. M. D.

THE JOINERS in the employment of Mr. Wm. M'Kenzie, of Westminster, held their annual festival on the 17th inst. at the King's Arms, Hampton Court, when very kindly feelings were expressed towards their employer.

HOUSES FOR THE WORKING CLASSES RECENTLY BUILT AT FLORENCE.

SOME time since (p. 154, *ante*) we gave the particulars of a building recently erected in Florence, under the direction of Signor Enrico Guidotti, for 100 families, and by the kind assistance of Mr. Henry Roberts we are now enabled to publish a plan showing the ground-floor and upper stories of the building, and the elevation. We may repeat, that the undertaking has been carried out by a society consisting of shareholders, and presided over by the Marquis Torrigiani, who obtained from the corporation, in the new quarter of the city, between the Piazza Maria Antonia and the Fortezza da Basso, a very eligible site, containing about 4,800 square yards, at a greatly reduced rent.

The building is three stories in height: its external dimensions are 344 feet 6 inches by 126 feet 3 inches: it is divided, internally, by five parallel courts, each 60 feet 6 inches by 27 feet 9 inches, connected together by a series of archways one story in height, which form a continued line through the centre of the building.

The pile of building, as shown by the plan, is divided into twelve sections: each has its own stone staircase, and together they provide 101 tenements, besides twelve stores or warehouses, and a large bakehouse.

The tenements differ in size, and consist of sets of two, three, four, and five rooms, generally larger than those in the London model houses. Each set has a communication with one of the internal courts, where wells for the supply of water, and stone troughs for washing, are provided. Each compartment of four and five rooms has, in addition, an underground cellar: every set of rooms has one of them fitted up as a kitchen, with fireplace, and also its own closet. The living and bed rooms have no fireplaces. The height of the rooms is from 10 to 11 feet. The basement, or cellar story, and the ground-floor, are arched with brick: the upper floors and roof are of the ordinary construction.

The tenements are subdivided in the following manner;—Twenty-two sets of five rooms, the annual rent of which is from 6*l.* to 8*l.* per set; fifty-one sets of four rooms, from 4*l.* to 6*l.* per set; fourteen sets of three rooms, from 2*l.* 10s. to 3*l.* per set; fourteen sets of two rooms, from 1*l.* 10s. to 2*l.* per set; making 101 sets in the whole.

The outlay on the building, including the direction of the works and keeping the accounts, &c. amounted to about 9,400*l.* sterling.

The annual income derived from the rents, exclusive of unoccupied apartments, of the ground-rent (redeemable at 4 per cent.), of the taxes, superintendence, keeping in order, and repairs, amounts to 470*l.* sterling, which is equal to five per cent. on the outlay. It is gratifying to find that the model houses in Florence have had a similar effect to that which has been found in other places,—in obliging the proprietors generally of houses occupied by the working classes to improve, and render them more fit for human habitations.

Half the plan, on left side, shows the ground-floor; the other half shows the floor above.

The following *References* will explain the plans:—

Ground Floor.

a. Stores.
b. Tower and store-rooms, for ventilation.
c. Office of agent for the society.
d. Entrance to the dwellings.
e. Entrance to the vaults.
f. Dwellings of five rooms each.
g. Dwellings of four rooms.
h. Ditto in interior.
A. Corridors, and courts divided by railings.
B. Wells and washing-places.
C. Staircases for twelve sets of apartments which form the basement.

First Floor.

1. Dwellings of five apartments each.
2. Dwellings of four apartments.
3. Ditto ditto.
4. Ditto of three apartments.
5. Ditto of two apartments.

The second floor is arranged the same as the first.

BETTER DWELLINGS, OR PROFITABLE CHARITY.

MEN of money! shrewd and skill'd
In putting capital to nurse,
Ready to pull down streets, or build,
If either helps to fill the purse,—
Now let me tell your wit a plan
How to reap a royal rent
Out of—doing good to Man,—
Charity, at cent. per cent.

From Belgravia cease awhile,
Cold, repulsive, stern, and white,
Where each huge palatial pile
Frowns the poor man out of sight;
From Tyburnia's dreary squares
Turn your energies aside,—
And look to how the workman fares
Who built those stuccoed haunts of pride.

In stagnant cellars, dim with stench,
In putrid alleys, choked by drains,
Or where the reeking gutters drench
Some garret, rotten with the rains,
Beggar'd of water, light, and air,
And every good that gladdens life,
The poor mechanic festers there
With pallid babes and haggard wife!

Can yonder neighbouring flashy shops,
Glorious in plaster, glass, and gilt,
Where Hebrews ticket showy slops,—
And bankrupt trade is overbuilt,
Can these repay your risk and cost,
Or make you half so blest or rich
As finding homes for those half-lost
Who crowd the dunghill and the ditch?

Build a broad street, a hive of homes,
Where workmen mostly go and come,
—A thousand weekly rented rooms
Will make a pretty yearly sum,—
Build it for cleanliness and health,
And judge it wisdom well to build,
Lest—foul miasma blast your wealth,
And that—your lodgings may be fill'd.

Build it for comfort, ay and pleasure,
For winter's warmth, and summer's cool,
With reading-room for evening leisure,
And—why not chapel, hall, and school?
The good mechanic's homestead-college
Where, with his homely flock and friends,
Work over, he may feed on knowledge
Or gather up its odds and ends.

Better than shop-fronts, gaudy-gay,
Better than mansions, let or sold,
Will such a wise investment *pay*,
And prove a mine of good and gold;—
Of good,—for so shall honest men
In healthy dwellings live content;
Of gold,—your well-used money then
Shall yield the builder cent. per cent!

M. F. TUPPER.

DRAINAGE WORKS IN ALTRINCHAM CHESHIRE.

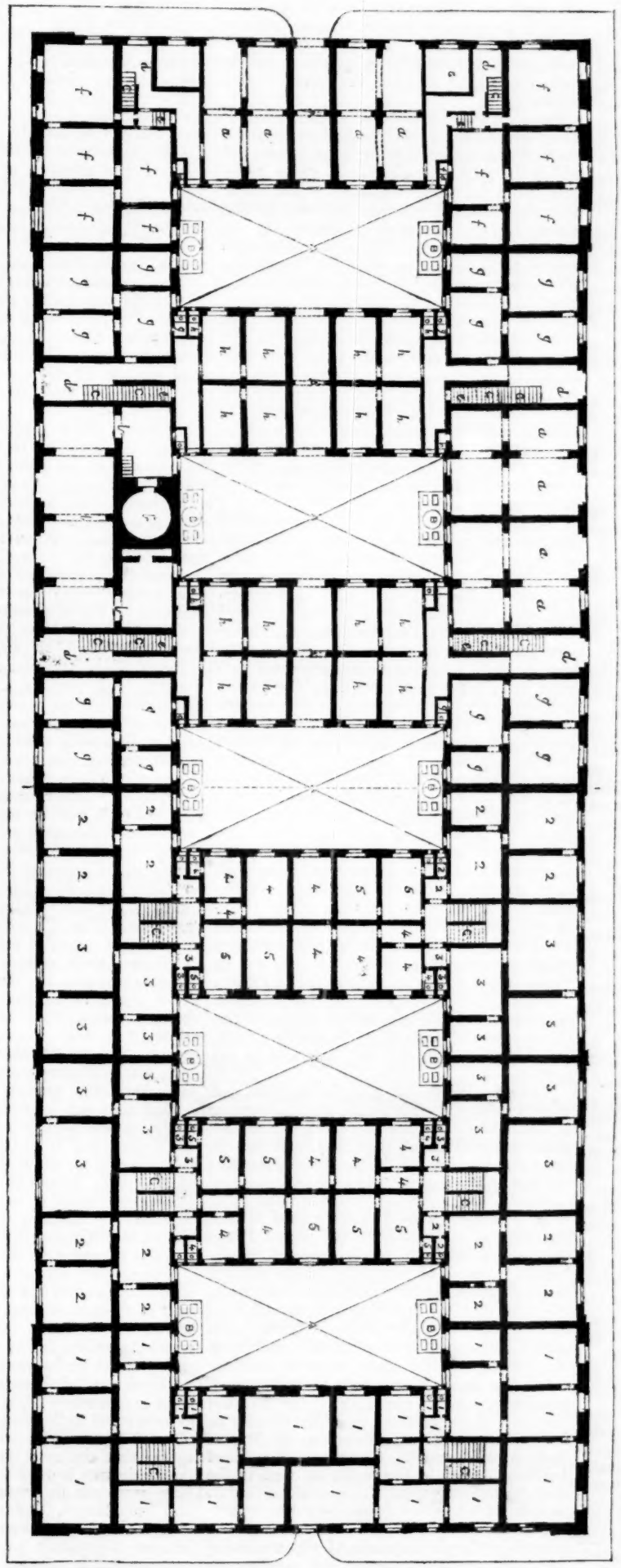
ALTRINCHAM is a small town of about 7,000 inhabitants, situate in the county of Chester, and distant from Manchester about eight miles. The Public Health Act was applied there (upon petition) some time ago, and the local board have just completed their works of sewerage.

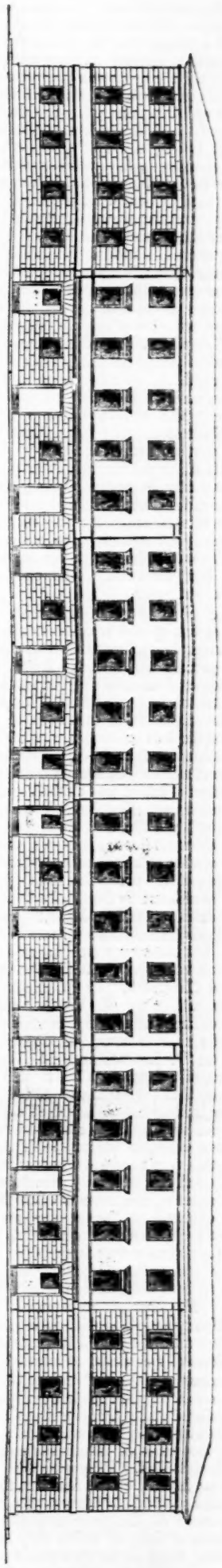
Egg-shaped pipes have been used throughout, the largest 25 inches by 18 inches, the smallest 6 inches by 4 inches.

There are public sewers to the extent of 7,041 lineal yards, laid at an average of 8 feet deep; the total cost, including gullies, manholes, engineering charges, superintendence, &c. 2,984*l.* 15s. 6d. or about 8s. 6d. per lineal yard. Brick sewers, large enough for a man to go up, would have cost very much more, of course; and we have now to see how these will act: at present, we are informed, they are working successfully.

The private drains, at an average of 6 feet deep, extend to 1,747 lineal yards, complete as above, and have cost 251*l.* 2s. 4d. or an average of about 2s. 10½d. per yard.

The local board are wishful to construct water-works for the district, and are in treaty with the Earl of Stamford for land, the water of certain springs, &c. The water will require to be pumped about 120 feet vertical. The estimated cost is 7,000*l.*





HOUSES FOR THE WORKING CLASSES, AT FLORENCE.—SIGNOR ENRICO GUIDOTTI, ARCHITECT.

ON THE INFLUENCE OF SOME EXTERNAL AGENTS ON THE DURABILITY OF BUILDING MATERIALS.*

OF late years attempts have been made to cast doubts upon the correctness of the generally received opinion, that it is essential to place stones on the same bed as they occupied in the quarry. With some few stones when in place, it may be true that the position of the layers is a matter of indifference; for the roche de St. Cloud, and the Villebois stone of the neighbourhood of Lyons, amongst the secondary and tertiary limestones, have been employed without reference to the planes of bed for many centuries without inconvenience. But these cases are decidedly exceptional; and, even in them, the powers of the stone to resist a crushing weight are less when it is applied in a direction parallel to the beds, than when it is applied transversely. In almost every other case it will be found that when stones are used the wrong way of the bed, to employ a workman's phrase, they disintegrate in parallel plates. Great care requires to be exercised to ascertain the precise direction of the natural beds, because many stones present the appearance of inclined planes of deposition, which cut the beds and joints under every modification of angle. When, from the stones having been worked in the quarry, it is difficult to ascertain the precise bed, it is possible that the mason may be misled by the greater facility with which they work in one direction, and may mistake this cleavage for the real bed. The only remedy appears to be to cause the stones exposed to this danger to be marked in the quarry, but, fortunately, the examples of its occurrence are rare.

The principal danger of exfoliation arises from the expansion of the moisture contained in the stone, under the influence of frost; and a very elegant process was invented by M. Brard, for the purpose of ascertaining the probable extent due to this cause. M. Brard, in his experiments upon the resistance of stones, caused them to be boiled for half an hour in a saturated solution of the sulphate of soda. They were then withdrawn and allowed to stand in a flat vessel, at the bottom of which was a small quantity of the same solution. The first efflorescences were washed off, and the degradation of the stones during the next five or six days, under the effects of the continued efflorescence, were taken as an indication of the probable extent to which they would be affected by frost. In the first volume of Rondelet's "Art de Bâtir," page 307 (ed. 1842, Paris), M. Brard's process is described in detail; but some very curious experiments recorded in vol. 7, 1re. "Série des Annales des Ponts et Chaussées," by M. Minard, together with an article by M. Vicat, inserted in the same volume, throw very considerable doubts upon the exact amount of dependance to be placed on its indications. M. Vicat, indeed, very properly observes, that it still remains to be proved that the expansive action of water in freezing is identical with that of crystallization, which can only produce energetic effect at temperatures between 68° and 86° Fahr. According to this very accurate observer, stones which are exposed to a southerly aspect, on the north of the equator, are more affected by frost than those exposed to the north; and the most efficient protection to materials of this description of a porous nature is a coating of oil paint, or any other fatty pigment which prevents moisture from being driven or absorbed into the stone. M. Minard recommends that stone should be quarried in the spring, and not employed in a building until it has been exposed to the effects of one winter at least.

In many varieties of the oolites, the fossil shells are to be observed left in high relief upon the surface by the decomposition of the materials in which they were embedded; and in Bath stone the veins of calcareous spar frequently become detached. It appears that the cause is the same in both cases, and that the shells and the veins protrude in consequence of the resisting powers of the more perfectly crystallized carbonate of lime, of which they are composed, exceeding those of the amorphous mass in which they are embedded. When nodules of flint or chert occur in the numerous varieties of carbonate of lime, the stone around them is usually more durable than the general mass of the rock, doubtless because it contains a portion of the silica in combination with the lime. It is known, indeed, that the application of a solution of soluble silica will at all times add much to the durability of the purer carbonates of lime; but it is very desirable that the conditions under which such a solution should be employed should be made the subject of close and careful experiments.

There are some varieties of arenaceous limestones and sandstones with calcareous cements, and a very remarkable silicious deposit, to be met with in the upper secondary and tertiary formations, which may eventually serve to throw light upon the chemical changes produced by the atmosphere, in consequence of the very decided character they assume. For instance, the sandy beds of the Kentish rag perish in consequence of the mechanical removal of the sandy cement which binds together the particles of limestone. The grès or sand stones of Fontainebleau and Windsor forest as frequently decompose in consequence of the removal of their calcareous cement by moisture, or by the action of the air; whilst the silicious beds of the lower chalk appear likely, from Mr. Way's experiments, to furnish materials of inestimable value to plastic art, and also afford a convenient and economical supply of the soluble silica required to compensate the deficiencies in other more generally employed materials.

With respect to the gypseous formations, it appears that where they occur in sufficient abundance to be used as ordinary building materials, they absorb moisture from the atmosphere with extraordinary facility; while they decompose with such rapidity that the municipal authorities of Paris have forbidden their being used for the walls of houses. Occasionally, however, rubble plaster stone is used for enclosure walls, but it rarely lasts more than from twenty to thirty years, when exposed to the weather near Paris. The cause of this rapid decay, according to Gmelin, is to be found in the fact that the sulphates with an earthy base (gypsum being a sulphate of lime) are soluble in water. It is also to be observed that many of the gypseous deposits, especially those found near Paris, are impregnated with an extraordinary proportion of organic matter: this decomposes on exposure to the air in warm and damp positions, and gives rise to the formation of nitrous salts to such an extent, that the saltpetre used by the French powder manufacturers during the last war was almost entirely obtained from cellars constructed of rubble masonry set in plaster in the style usually adopted in France. It is possible that the gases which are present in rain water, or in the atmosphere, may give rise to a species of decomposition by relative affinity, in combination with the sulphuric acid of the gypsum.

Atmospheric influence upon bricks, tiles, and other building materials obtained by the burning of plastic clays, depends very much on the chemical composition of the clays, and on the degree of burning. Thus any distinct portions of limestone present in them would be converted into quick lime in the kiln, and when the bricks were thoroughly wetted would expand in such a manner as to disintegrate the mass. If the clay used is too poor, that is to say, if it contains an excess of sand, the bricks will not become sufficiently fused, and upon exposure to the weather their constituent parts will separate. It is to be observed that in bricks, as in stones, decomposition does not take place with the greatest rapidity where constant moisture exists, but rather where, from the influence of capillarity, variable according to the moisture furnished by the atmosphere either directly or indirectly, a series of alternations of dryness and humidity prevail. The foundation walls of buildings do not, in fact, suffer so much in the parts immediately upon the ground, as they do in those at a height of from 1 to 3 feet, according to the permeability of the materials employed. When bricks made of clay containing free silica are laid in mortar, and moisture can pass freely from either one or the other, it may be observed that the edges in contact become harder than the body of the bricks. No doubt this arises from the formation of a silicate of lime and alumina, the lime being furnished by the passage of the water through the bed of mortar.

Upon limes and cements the effects of the atmosphere are very marked, although at present they are considered to be of far less importance than formerly. All the materials of this class, whether the hydraulic, or the rich limes, the cements, or the plasters properly so called, have a remarkable avidity for water, and abstracting it from the surrounding atmosphere assume the form of hydrates. If these occur in the conditions requisite to enable them to pass into the carbonates, or sulphates, a species of confused crystallization or aggregation takes place. But it must be evident, from what was said in the commencement of this notice, that the quantity of carbonic acid gas the atmosphere is capable of furnishing within a moderate period is exceedingly small, and the theory that limes or cements harden originally by the absorption of that gas and the consequent conversion of the lime into carbonate of lime must be abandoned. There can be no doubt but that the conversion of the lime into the carbonate must increase its cohesion, but the rapid setting, to use a workman's phrase, cannot be accounted for in this manner. It appears, so far as we are able to judge in the actual state of applied chemistry, that mortars harden in consequence of the formation of an insoluble silicate of lime and alumina, the silica being either furnished by the limestone itself, or by the sand, pozzolano, or other ingredient mixed with the slacked lime. When the setting has been once effected, the absorption of carbonic acid gas from the atmosphere may tend to harden a thin external film; but the very perceptible character of this film militates against the supposition that the cause producing it can act upon the interior of the mass.

Nevertheless, the numerous classes of limes, cements, and plasters, exhibit very marked differences in their manner of resisting the action of the atmosphere. The purer carbonates of lime when used for the preparation of mortar, are excessively soluble in water; and if the mortar obtained from them be much exposed to the weather, or to the action of running water, it will be rapidly removed. The argillaceous limestones, on the contrary, furnish the elements necessary to form an insoluble double salt of lime with the silica and alumina; and if the mortars made from them be protected from running water during the period required for their setting, the action of either weather or running water subsequently will rather tend to increase their powers of resistance. The practical lesson to be drawn from these facts would appear to be, that none but the limes obtained from argillaceous limestones should be employed in damp situations. With respect to the use of plaster, the observations before made upon the gypseous stones will apply here perhaps with even greater force. Indeed, the marked difference between the external aspects of the applied plaster and the natural stone, would show that in the process of calcination some element we are unable to ascertain must be driven off. It may be that the burnt plaster yields more readily on account of the absence of this very element; but certain it is that plaster of Paris very rapidly decays when exposed to the influence of the atmosphere.

Temperature appears to act in a distinct manner upon limes and cements, for if they are used in summer, without the adoption of any precautions to defend them from the sun, they invariably crack; and of course, if their water of crystallisation becomes frozen in winter, the whole mass will disintegrate. The more rapidly limes or cements solidify, the more they appear to be exposed to the danger and inconvenience of cracking in warm weather, and it would appear that the most favourable condition for their resistance is when a certain degree of uniform moderate dampness prevails. It must also be observed, that sea air has a marked influence upon the durability of some limes, because the minute particles of sea-water it contains hold in solution many salts with which free lime has more affinity than with silica.

The decay of wood superinduced by atmospheric action, is affected by a different class of phenomena from those which tend to destroy

* See p. 358, *ante*.

stones and metals, namely, those connected with organic chemistry; although, at the same time, the changes produced by inorganic elements are as powerful in the one case as the other. From the day when wood is felled to the day it is used, it requires care and attention, and when it is in place, precautions should still be taken to insure its durability. Currents of air which are either renewed with too great rapidity, or are too dry, a temperature too elevated, constant moisture at high temperatures, alternations of dryness and humidity, absence of ventilation producing wet rot, the accidental transport by the atmosphere of the seeds of certain cryptogamous plants producing dry rot, and the attacks of insects, together with the fermentation of the sap of the trees, may be cited amongst the numerous sources of danger from which it is necessary to secure wood either when in store, or when employed.

When wood is exposed to frequent currents of air, especially at high temperatures, the moisture it contains evaporates too rapidly, and gives rise to cracks and fissures which either destroy the resistance of the material, or open a passage for the water contained at other times in the atmosphere to penetrate to the interior of the mass. If the temperature to which wood is exposed, whilst any sap remains in it, is too elevated, the vegetable fluids ferment; the tenacity is diminished, and when the action is carried to its full extent, the wood quickly becomes affected by the dry rot. Exposure to the atmosphere in positions where rain can lodge in quantity, contact with the ground, and application in damp situations deprived of air, will render wood liable to the wet rot; and however well seasoned it may have been previously to being brought within the influence of any of these causes, it will infallibly suffer. It is, therefore, of the highest importance, that, whether in the merchants' stores, or subsequently, when placed in a building, wood should be preserved from contact with the ground, and that air should have free access to it in every direction. The germs of destruction are often communicated whilst the wood is in store from neglect of these simple precautions: if they be once implanted, the progress of decay can never be subsequently arrested. It has been supposed that keeping wood in water tends to prevent the commencement of dry rot, because in that position the sap is washed out of the pores. If this theory is correct, it must be evident that the oftener the water is changed, the greater will be the probability of its producing the desired effect, because, if it be allowed to stagnate, it must become saturated with the sap in course of time, and unable to take up any additional quantity which may be present. Duhamel observed, that if wood were immersed immediately after it was felled, it would be less liable to decay than if put in water at a subsequent period: he also found that immersion tended to preserve the wood from the attacks of insects, and even to arrest the progress of some kinds of decay, but that a notable portion of the strength was lost. The drying and seasoning take place with greater rapidity after immersion, probably because the water displaces the sap, which does not evaporate so rapidly as the thinner fluid. Duhamel asserts that the process of charring the ends of posts, &c. built into the ground, is very inefficient, and that it is only of use to the extent of interposing an extraneous substance between the wood and the earth: in his opinion, it would be better to enclose the lower ends in sand, stone, cinders, or other materials, which would easily carry off the water supplied by the surrounding media.

When wood is converted and placed in a building, its durability may be greatly increased by covering it with a coating of paint, or other substance which will prevent the moisture of the atmosphere from obtaining access to it. But it is essential that the wood so covered should be free from sap, or internal moisture, or the very perfection of the coating will be found to accelerate its decay. Care must be taken to prevent water from finding its way into the joints; and if the wood be exposed directly to the action of the sun, it should be painted of a colour able to reflect rather than to absorb heat. It is desirable that it should be planed before being painted, in order that the paint may be applied in an equal manner over the surface. It is important also to observe, that the moisture in the atmosphere not only affects the volume of the wood, but frequently alters the position of the fibres by producing a torsion analagous to that which may be observed in hygrometric cords.

Of late years the processes of Kyanizing, creosoting, and immersing timber in solutions of mineral salts, have been applied with various success for preserving it from rot and the attacks of worms or ants. Of these, Kyanizing, which employs a solution of deutochloride of mercury, appears to be most satisfactory; and among some striking illustrations of its results may be cited the fence of the Regent's-park, the posts of which were inserted in the ground without being painted, at least eighteen years since, and remain at the present day in very tolerable condition. For railways and harbour works, English engineers appear to prefer the system of creosoting, or immersing the timber in the rough oil of tar, until it has absorbed at least seven or eight pounds per cubic foot. The difficulty of injecting so large a quantity of oil is overcome by exhausting the sap and moisture from the wood in vacuo, and then forcing in the oil under great pressure: a species of artificial drying is, however, frequently necessary, and indeed the success of this process appears to depend entirely upon the extent to which the original moisture is withdrawn. Both corrosive sublimate and oil of tar are capable of resisting the causes of decay communicated by the atmosphere, and the latter is said to be an effectual preservative against the attacks of boring animals; but it is to be feared that the ordinary manner of applying them does not insure their penetration to a sufficient depth to attain the objects desired. The use of the sulphate of copper, and of the other metallic salts has hitherto been unsuccessful.

In the bent timber bridges which have been constructed on some of the recent lines of railway, although every ordinary precaution was taken in selecting the timber, immersing it in solutions of the metallic salts, and in painting it when in place, the wet rot has exhibited itself in so many instances as to render it almost necessary to abandon a system which appeared to have many recommendations. It is, however, to be observed, that these bridges decayed solely because their elasticity caused them to yield upon the passage of every train. The play thus produced caused the joints to open; and moisture, furnished by rain or the condensation of vapour, found its way into the interior of the beams. The failure of the bent timber ribs in such situations does not, therefore, in any manner affect the propriety of using that construction on more suitable occasions. A valuable lesson is, however, to be learnt from the above fact, viz. that it is difficult, if not impossible, to protect complicated systems of carpentry from the effects of the atmosphere, when exposed to the occasional action of heavy loads able to produce a disturbance of their main parts.

In the theatre at Munich a soluble glass was applied to the woodwork and scenery for the purpose of preserving, and, as far as possible, rendering them incombustible.* This glass was in fact a solution of free silica in caustic alkali; and if the wood was properly seasoned, there can be no doubt of the value of the application, especially if it was injected under pressure. Professor Way's researches into the silica beds of the lower chalk prove that a solution of this nature could be obtained easily and economically; and the advantages it offers certainly render its application desirable.† G. R. B.

Extensive New Building for the Tower Hamlets Militia.—On Thursday, at the meeting of Middlesex magistrates, the county treasurer made a representation to the court that he had been informed by the clerk of the Liberty of the Tower, that the sum of 14,500*l.* would be required for the erection of store-houses and dwellings for the two regiments of Tower Hamlets militia. This matter was referred to the committee for financial and general purposes.

* This process was first suggested in the *Builder* several years ago.

† To be continued.

THE EDUCATIONAL EXHIBITION.

Having in view the very interesting and instructive character of the Educational Exhibition, now opened at St. Martin's-hall, in Long-acre, by the Society of Arts, we are anxious to commend it to the attention of all persons professionally or otherwise concerned in education. The exhibition illustrates the actual condition of education, not only in the United Kingdom and in some of the colonies, but also in France, Belgium, Holland, Norway, Sweden, Denmark, Germany, Switzerland, Spain, and the United States; and is highly suggestive of improvements in the modes and means of public and private instruction. It is very desirable that all persons engaged in education, and especially the teachers of normal and elementary schools, should be enabled to profit by the advantages which this Educational Exhibition is calculated to confer upon those who carefully study it; and it is to be hoped that the civil authorities, ministers of religion, patrons, and managers of schools, and all persons of authority and influence, will promote the making of arrangements which may enable scholars, tutors, governesses, schoolmistresses, and others engaged in education, to resort to London, and to visit the Educational Exhibition before the 31st of August next, when it will close.

PROVINCIAL NEWS.

Yarmouth.—The inhabitants are grumbling a good deal about the delay in opening the new bridge, the balancing of which, it would appear, has not even yet been adjusted. It is said to be now about four years since the work was begun; and for months past it has always been about to be opened. There must be some bungling in the arrangements. The bridge, as we have already noted, is on the tubular principle, and opens upwards in two leaves, the iron balances being originally so adjusted, that when the leaves are raised the balances meet the surface of the water, when the difference of specific gravity is so great that it requires double the number of men to complete the raising; and again in lowering, the pressure of the water is so great that almost as much difficulty is found in getting the ballast out of the water. This appears to be rather an awkward state of matters.——A new Independent chapel is about to be erected at the corner of King-street. The first stone, according to the *Norfolk Chronicle*, will probably be laid forthwith by Mr. Peto, M.P.

Norwich.—The tenders for fitting up the galleries and seats in the Hall, St. Andrew's, for the Norwich festival of September were delivered on 12th inst. and are as follow:—

Messrs. Lucas, Brothers	£297	0	0
Stannard (Norwich)	210	0	0
Griffin	205	0	0
G. Lacy	185	0	0
Gilbert (accepted)	174	17	0

Architect, Mr. E. E. Benest, city surveyor. Quantities not supplied.

Market Rasen.—The commissioners of the Bawtry and Hainton turnpike trust a short time since advertised for tenders for the building of two bridges, one over a small stream at Market Rasen, the other over the river Rase, at West Rasen. The following tenders were sent in, viz. for the West Rasen bridge:—

Sanderson (Rasen)	£691	0	0
Hewitt (ditto)	681	0	0
Kirk (Lincoln)	578	0	0

For the Market Rasen bridge:—

(Sanderson (Rasen)	£250	0	0
Chapman (ditto)	200	0	0
Kirk (Lincoln)	216	0	0

For both bridges:—

Croft (Gainsborough)	575	0	0

Swindon.—On Tuesday in last week, the Church of St. John the Evangelist, lately erected at Swindon, in the parish of Wombourn, was consecrated by the Bishop of Lichfield. The edifice, which is of the Early Geometrical style of English architecture of the thirteenth century, consists of chancel 22 feet by 18 feet, nave 65 feet by 20 feet, and north aisle 65 feet by 10½ feet, and affords accommodation for 400 worshippers in open pews on boarded floors. It is built entirely of red sandstone, with yellow

stone dressings externally, from the quarries at Gornal. The aisle is divided from the nave by five bays or arches. The whole of the pillars and arches inside are of deep red stone. The roofs, which are open, with the framed timbers exposed, are principally covered with brown tiles. There is a stone bell-cot over the west gable. The chancel, which is elevated, is partly laid with encaustic tiles, and the aisles are laid with chequered pavement. The churchyard is enclosed with a stone wall, and a lich-gate is intended to be erected over the principal gateway. The cost of the church, including churchyard walls, has been about 1,400*l.*

Evesham.—On Monday before last, the tenders for the new bridge over the Avon were opened at a meeting of council, when the tender of Mr. Taylor, of London, was accepted, being for 8,865*l.* odd. Several other tenders were sent in.

Ledbury.—Great improvements, according to the Worcester papers, have been made during the last few months in the works and plant belonging to the Ledbury Gas Company: old and inefficient mains have been taken up and new ones of larger dimensions substituted, additional mains laid down where wanted, and the gasometer is being enlarged.

Hanley.—The new church of St. Luke (Wellington district church), was consecrated on Thursday week. It is in the Decorated style, and is built entirely of stone from the Werrington quarries. It consists of nave, 69 feet long and 24 feet wide; north aisle, same length and 15½ feet wide; chancel, 22½ feet long and 20 feet wide; north porch, and the base of a steeple at south-east angle of nave. The character of the church as to its proportions is broad and rather low. The nave and aisles are divided by a range of pillars and arches; and the chancel and tower also by arches from the nave. The interior is fitted up with open seats of deal, stained; and the roofs are also of open timber, stained. The chancel is laid with Minton and Co.'s encaustic tiles, given by Mr. H. Minton, in addition to a subscription of 100*l.* towards the church. A gallery for children runs across the west end, and is approached by a stone staircase from the outside, enclosed in a turret, which is carried up above the roofing of the church, so as to form a feature in the composition, and is surmounted by a vane of copper gilt. The windows are all filled in with tracery of a simple character. All the gables are surmounted with stone crosses. The roofs outside are covered with tiles arranged in pattern, as are the aisles inside. The edifice will accommodate (including the children's gallery) about 670 persons. The cost of its erection is about 1,900*l.* exclusive of warming and fencing (not yet done), and architects' commission. The architects are Messrs. Ward and Son, of Hanley. This is the second church consecrated in the district within the last six weeks, and built from designs by the same architects. The carvings were executed by Mr. G. Gladwin, of Penkhull; and the font by Mr. Hodsman, foreman to Messrs. Heap, Naylor, and Co. Southowram, near Halifax, the contractors for the completion of the building. There is a deficiency still in the building fund.

Cheltenham.—The foundation-stone of the new Roman Catholic Chapel in St. James's-square was laid in week before last.

Llanvair Waterdine.—On 4th inst. the new parish church here was opened by the Bishop of Hereford. It has been erected from the designs and under the superintendence of Mr. Thos. Nicholson, architect to the Hereford Diocesan Board, and is in the Decorated style, consisting of nave and north aisle, divided from each other by an arcade of four arches and pillars, a chancel, separated from the nave by a moulded arch, a vestry, and a turret at north-west angle of nave, surmounted with a spire. The roofs are all exposed to view, and are of trussed-rafter form, stained and varnished. The benches are open, and are in part free. The church is capable of accommodating 250 persons, wholly on the ground-floor, galleries having been avoided. The space within the communion-rail and the aisle to it are laid with Godwin's encaustic tiles, and inlaid with Early English and various other devices, manufactured for the edifice at Lugwardine. The windows are filled with Powell's stamped quarries, with enriched borders. The building was executed by Mr. Jones, of Brecon.

Newcastle-under-Lyne. — The new covered market here is now completed, and was formally opened on Saturday in week before last. The principal front to Penkhull-street is in the Elizabethan style of architecture, in red brick chequered with blue, and has Hollington stone dressings. An oriel window stands in relief, with the doorway immediately beneath. The building, which is surmounted by a castellated parapet and gable, is three stories in height, and has a frontage of 41 feet. On the ground-floor are shops. The first floor contains two rooms, let as offices. These rooms are 13 feet 6 inches high, and the larger one is 25 feet square. The rooms on the second floor are also to be let for offices. The market is in three divisions, separated by flights of steps. The first division is for butter, eggs, poultry, and fruit. This division is 80 feet long, 40 broad, and 30 feet in height. The central market is approached from the above by a flight of twelve steps, and is fitted up with stalls for the sale of provisions and light wares. It is 60 feet long, 53 wide, and 30 feet high. The butchers' market is next approached by a similar flight of steps. It is fitted up with stalls, &c. for forty-seven butchers. In this market are also two fish stalls. This division is 101 feet long, 53 feet broad, and 36 feet high. The whole of the walls are strengthened and relieved by Gothic arches and buttresses. The roofs are of wrought iron. The markets are lighted by longitudinal turrets, with alternate sashes and glass louvres. The roofs of the central and butchers' market are in two spans, and are supported by a single row of columns and girders, in the perforations of which are shields emblazoned with the borough arms. The whole of the ironwork is painted light blue, relieved with narrow stripes of white. In connection with the building is the out-pensioners' armoury (a fire-proof erection, which is already occupied) and the sergeant's house. The buildings are all slated, with the exception of those fronting the streets, which are covered with ornamental tiles. Mr. Robert Chapman, of Newcastle, was the contractor for the works, and, it seems, also designed them.

THE LONDON SMOKE ACT AND THE FIRST OF AUGUST.

IT is a legal fiction that every one knows the law. As matter of fact, very few know anything about it. Let us, therefore, deserve the thanks of the community by telling them that Lord Palmerston's Smoke Consumption Act for London, the penalties of which are to come in force from the 1st of August, applies not only to smoke, but also to offensive effluvia. Tripe-boilers, catgut-makers, candle-makers, gas manufacturers, vinegar makers, whitening-makers, bone-boilers, and a vast number of other very industrious persons who have hitherto been poisoning the lieges, had better lose no time in sweetening their processes, or in getting a handsome balance at their bankers' to meet heavy penalties.

The following is a short statement of the provisions of this—we hope that we may soon call it, very valuable—Act.

Section 1. After August 1, 1854, every furnace of a steam-engine, and furnace of every mill, factory, printing-house, dye-house, iron foundry, glass-house, distillery, brew-house, sugar refinery, bakehouse, gas-works, water-works, or other building used for trade or manufacture, is to be so made or altered as to consume its own smoke.

And if any person shall, after that day, use any such furnace not made to consume its own smoke, or shall so negligently use such furnace as that its smoke shall not be consumed, *or shall carry on any trade or business which shall occasion any noxious or offensive effluvia, or otherwise annoy the neighbourhood or inhabitants*, without using the best practicable means for preventing or counteracting such smoke or other annoyance, the offender, being owner, occupier, foreman, or other person employed, shall forfeit for the first offence from 40s. to 5*l.*; second, 10*l.*; third, 20*l.*; fourth, 40*l.* and so on, doubling every time.

But glass-works and pottery-works, established before August 20, 1853, are exempted, except as to steam-engine furnaces and slip-kiln furnaces.

Section 2. Steamers on the Thames above London-bridge are to consume their own smoke under the same penalties.

Section 3. Justices may remit penalties on proof that smoke is consumed as far as possible.

Section 4. Police constables may enter buildings and steamers and examine furnaces. 20*l.* penalty for obstructing them.

Section 5. No information to be laid for a penalty under the Act, except under the authority of the Home Secretary or the Commissioners of Police.

Section 6. "Metropolis" to mean the same as in the Metropolitan Burials Act, 15 & 16 Vict. c. 85, taking in the cities of London and Westminster, Southwark and neighbouring parishes as far as Hampstead, Islington, Stoke Newington, Bow, Bromley, Woolwich, Clapham, Camberwell, Streatham, and Putney.

Section 7. City Sewers and Whitechapel Improvement Acts not to be affected.

Section 8. Penalties to be recovered under 11 & 12 Vict. c. 43, so that they must be sued for within six months after the commission of the offence.

SURVEYORS' FEES.

LOCKWOOD *v.* AMOR.—This action was brought in the Marylebone County Court, before Mr. J. L. Adolphus, to recover 5*l.* 12s. 6d.

Mr. Keene, solicitor, appeared for Messrs. Lockwood, surveyors, and Mr. Herring was for the defendant, who described himself as a surveyor and house-agent.

Mr. Lockwood stated, that Mr. Parker, who was clerk to the defendant, called at witness's office, and informed his clerk that Mr. Amor had a house of his own, at 3, Hinde-street, which he wanted surveyed. He accordingly surveyed the house, which was a large one, and his estimate of the dilapidations came to 26*l.* 7s. 3d. His charge was 2*l.* 2s. for the survey, and five per cent. upon the estimate, and the remainder of the claim was for fair copy of estimate, specification, and other matters appertaining to the survey. The charge was fair and usual.

By Mr. Herring.—The defendant's clerk did not say that Mr. Amor was a surveyor, and could take the survey himself, but the house being his own, he wanted a disinterested party to take the survey. It was not agreed that witness should take the survey for one guinea—would not have accepted the offer.

Mr. Parker, architect, gave it as his opinion, that the claim was fair, and less than what he should have charged.

Mr. Herring contended that the charges were exorbitant. His client was a surveyor and neighbour of the plaintiff's, and thought it a neighbourly action to offer the plaintiff a guinea for the survey. It turned out that plaintiff's services were valueless, and that he had charged over and over again for the same work. Of what use was a survey without a written copy of it? The two guineas charged for the survey were amply sufficient, without adding charges for written copies of it. His client had paid 2*l.* 12s. into court in full satisfaction.

Mr. Parker, managing clerk to the defendant, said he called at the plaintiff's office, and gave the clerk to understand that Mr. Amor would pay one guinea only for the survey, as he could do it himself, but felt a delicacy, as the house was his own. Went over the survey with Mr. Lockwood, and it did not occupy more than two hours.

By Mr. Keene.—They profess to be surveyors. Had heard that Mr. Amor had been a fishmonger. Considers the charge high. Mr. Amor calls himself an architect and surveyor. Mr. Keene commented upon parties styling themselves surveyors, and acting as such, when in reality they knew nothing about the profession. He urged that the evidence of Mr. Parker, the architect, who was brought up to the profession, and who swore that the charge was fair and customary, was deserving of more weight than the opinion of the fishmonger.

The Judge said, it appeared a very large sum for the business done, but he was of opinion that surveyors were entitled to charge for survey, estimate, specification, &c. separately. He should, however, deduct, 1*l.* 1s. off the commission. Verdict for plaintiff accordingly, with costs.

BOSTON CEMETERY COMPETITION. — The first premium has been awarded to Messrs. Pritchett and Son, of York; and the second to Mr. Barry, of Liverpool.

THE METROPOLITAN SEWERS COMMISSION.

AT a vestry meeting of St. Marylebone, on Saturday in last week, Sir B. Hall announced that the Home Secretary intended to introduce the representative system into the Metropolitan Sewers Commission continuance Bill, as well as ultimately when the general subject of metropolitan corporate or municipal reform was carried out; that his lordship proposed that six commissioners should be appointed by the Government and six by the metropolitan members of Parliament, who, together with a paid chairman as heretofore, would constitute the Metropolitan Sewers Commission during the temporary continuance for another year. Among the clauses which would be introduced into the new Bill was one that separate accounts should be kept of the sewage of the metropolis and its expenditure for the north and the south side of the Thames. The main trunk sewers, projected under the sanction of Sir R. Stephenson, Sir W. Cubitt, and other engineers, were to be carried out. These reports and plans were now out, and a sum of 300,000*l.* was proposed to be raised for the construction of these great main outlets to the sewage of the metropolis. Sir Benjamin stated that Lord Dudley Stuart and he desired the parishes of Marylebone to select their own representatives at the new board, and arrangements are being made to that end.—A special court was held by the present Commissioners in the beginning of this week, at which it was stated, in a return read by the secretary, that during the last twelve months, there had been constructed 177,571 feet of brick sewer, or nearly 34 miles, and of pipe sewers there had been laid down 31,894 feet, or about six miles, making a total for the year of about 40 miles of new sewers, and that it would be recollected, that last year it was reported that 43 miles of new sewers had been executed; so that during its two years of office the commission had constructed 84 miles of sewerage works. Now, the cost of the 40 miles length of sewers was 160,929*l.*; the cost of repairing sewers was 10,353*l.*; cost of side entrances, air shafts, gulleys, &c., 11,304*l.*; cleansing, 19,865*l.*; incidentals, 5,704*l.*; making the total sum expended on works during the last twelve months, 208,155*l.* Moreover, there were in hand now very large contracts.

BUILDERS' BILLS: STATUTE OF LIMITATIONS.

In the Westminster County Court, an action was brought by a builder and surveyor, named Foreman, against Baron Lionel Rothschild, M.P. for the City of London, to recover the sum of 31*l.* In December, 1845, the plaintiff was engaged by the late Baroness Rothschild, wife of the defendant, to effect an alteration in the orangery at their seat at Ealing, for which the contract was 200*l.* One part of the alteration was to remove the slate roof and substitute glass, the plaintiff, as usual, deeming the old materials to be his property. He was afterwards required to survey and give in an estimate for alterations at the town residence at Piccadilly. On plaintiff requesting the slates, he found they had been used; and on presenting a receipt for 20 guineas (his charge), defendant put down 10*l.* which plaintiff took up, and with the receipt, walked away without giving an acknowledgment. Plaintiff's demand for the retention and value of the slates was 20*l.* which, with 11*l.* he considered he ought to have been paid in addition to the 10*l.* mentioned, amounted to the sum he sought to recover. The defence set up was, that the claim for the slates was not valid, and that the claim had been made for work done more than seven years ago. The judge said not only was the plea of the Statute of Limitations fatal, but that the plaintiff, having received the 10*l.* after this charge was demurred at, did so in liquidation of all demands.

Notices of Books.

Sound and its Phenomena. By the Rev. Dr. BREWER, Trinity Hall, Cambridge. Longman and Co. 1854.

THIS pleasantly written little book constitutes the first part of a series of lectures on Common Phenomena adapted especially to schools, the industrial classes, teachers, and the mothers of families. It contains much interesting information in regard to musical instruments of all sorts from the bagpipe "cry of a nettle" cut into joints, to the "soul of a violin" and the minute structure and vibrations of the cathedral organ, together with some little information (we wish it had been more) on the subject of resonance in reference to structures, sound reflectors, orchestras, &c. The human voice is pretty fully treated of, together with the voices of birds, and even of reptiles and insects; but the principal portion contains some curious and entertaining information on the subject of wind and stringed instruments, such as reeds and violins, pianofortes, organs, seraphines, accordions, serpents, &c. and an introductory part of several chapters on the laws of sound in general. The type is clear and large, and the book is illustrated with woodcuts.

Miscellanea.

THE LATE MR. MACKENZIE.—Some friends of the late Mr. Frederic Mackenzie, the well-known architectural draughtsman, are endeavouring to raise by subscription a provision for his widow and daughter, who, by the sudden termination of his useful and laborious life, have been left without that moderate competence which his application and talent might have justified them in expecting. It is understood that his want of success in a pecuniary point of view can be ascribed to nothing but the failure of certain enterprises carried on by him in an honourable spirit, and to losses sustained in the benevolent endeavour to assist those who were at the time in a position less prosperous than his own. To these causes may be added the deficiency of profitable employment which Mr. Mackenzie experienced during the last few years of his life, arising from the changes of appliances incidental to those particular branches of the art—topographical and architectural design—from which he was accustomed to derive his principal resources. The Society of Painters in Water-colours have presented the sum of 110*l.* to his survivors; and we sincerely hope that means will be raised to purchase an annuity for the maintenance of his widow and daughter.

CELEBRATION OF THE UNION BETWEEN ENGLAND AND FRANCE.—Being called upon to lend our aid in the promotion of the proposed National Festival in celebration of the union between France and England,—a happy union, even though established in a state of war,—we most willingly do so, as doubtless its originators also do, in no mere heedless spirit of merrymaking at a period of peril and of human sacrifice to which one overweening, self-seeking Moloch devotes hundreds of thousands of his own hosts as well as of those of the curbers of his insane ambition, every soul in either of them just as precious and as life-worthy as his own. There are such things as Solemn Festivals, and this is one. That it may tend to the establishment of a lasting peace and friendship between the two rival nations who are about to celebrate it, is our most earnest prayer and hope. We are glad to hear that subscriptions are coming in from different towns throughout the country as well as from the metropolis, in which the Festival is to be held. The chief difficulty, doubtless, will be to arrange the entertainment most worthy of our distinguished guests, as well as most honourable to ourselves. It is to be hoped that public bodies and influential persons will cordially co-operate with the committee, who appeal to them for aid in the promotion of the objects in view.

NEW CRYSTAL PALACES.—A crystal palace, it is reported, is to be built at Naples. The king, it is said, has approved of the plan, and pointed out the Villa Reale, close to the sea, as the site.—In the construction of the Berlin Crystal Palace, it appears that 30,000 cwt. of iron and 215,700 feet of glass have been employed. The ground plan is cruciform, the elongated portion, running east and west, 800 feet, and the arms, north and south, 280 feet. The breadth of the transept is 160 feet, the square superficies of the whole 134,400 feet, the maximum height 80 feet, that of the transept 80 feet, and the minimum of the lateral alleys and branches 60 feet. The transept is divided into five parallel alleys by columns 20 feet high, serving as bases to the arches. The materials are, as usual, iron and glass.

DANGEROUS CROSSING IN THE STRAND.—A correspondent, "Humanitas," draws our attention to a suggestion in the *Globe*, that at the very dangerous crossing in the Strand, between Wellington-streets, north and south, a couple of refuges for foot passengers, should be constructed, one on either side of the road. Care, of course, would require to be taken that they should not be of such dimensions as to form any positive obstruction to the traffic. The parish authorities ought to see to it.

IMPROVEMENTS IN BRIDGES.—Mr. Baker, of Chillington Colliery, Wolverhampton, has lately invented some improvements in the construction of railway and other bridges, and the method of lifting them after sinking by mining operations. The invention is said to give greater stability to the bridge, and little or no preparatory work is required prior to the lifting process. The slightest indication of danger from sinking may, it is said, in a short time be remedied, and the bridge can be lifted at an inconsiderable expense, and without much loss of time.

THE IRON TRADE.—The Birmingham trade correspondent of the *Morning Herald* admits that already "the high price of beams, girders, and other materials has impeded, and, in some instances, suspended, the progress of important building operations in various parts of the kingdom," and adds that "it is desirable to mitigate this evil as much as possible." The *Staffordshire Advertiser* of last week, while intimating that orders have slackened since the declaration of the preliminary quarterly meeting, states that "from America there has been a perceptible decrease in the number of orders, since it became known there that the rates of prices generally obtained (?) would be declared to be the ruling ones, for the Americans can now manufacture iron for less money than they have to pay for the English article, but as yet by no means to the extent of their requirements." The *Cambrian* thus speaks of the recent doings in this trade:—"The advance of 20s. per ton upon iron has been anything but satisfactory, particularly the circumlocutionary way in which it was effected. The meeting of masters resolved that prices should *remain the same*, and in the same resolution they quoted the prices at an advance of 1*l.* per ton upon the three leading kinds of iron. The consequence has been that buyers hardly know how to purchase, whether to insist upon the declaration of the first part of the resolution, or comply with the advanced price in the latter. The resolution is no doubt intended to convey that prices are to remain the same as *were said* to have been obtained during the quarter, and not the duly declared prices of the previous quarter day; but this is held by the trade generally to be a very objectionable mode of dealing with the price of an article so essentially necessary for the manufacturing purposes of the district. This curious resolution was, I understand, the result of a disagreement in the meeting relative to the proposal for an advance. By many masters it was then, and is now, considered highly impolitic, and calculated to injure the trade of this district, and benefit, in a corresponding degree, rival manufactories in other parts where prices are not so extravagantly high."

MANCHESTER SCHOOL OF ART.—The council of the Manchester School of Practical Art have issued a circular to other schools for their co-operation in some arrangement for bringing before Parliament next session the subject of the recent decision of the Government Department of Science and Art, to diminish the grants to provincial schools of art, for the purpose of encouraging a spirit of self-support and local subscription for the sustainment of these schools. The council of the Manchester School have passed a series of resolutions deprecating that diminution of Government grant, and expressive of an opinion that the provincial schools are fully as much entitled to the support of the State as the metropolitan school, which is not aided by private or local subscription at all. The recent withdrawal of the full amount of usual aid by Government, they conceive, will disorganize the committees, and retard the progress of art and taste in the provinces.

STRIKE OF STONEMASONS.—On Monday in last week, about a hundred stonemasons in the employ of Mr. Armstead, builder, of Preston, struck work. Their employer, it appears, is erecting a church at Leyland, and a house at Chaigley, and the masons there employed asked for an advance of 2*s.* a week as extra allowance, as customary when sent out to job-work in the country. The employer declined to apply this principle to the contract work in question. Nearly the whole of the men struck work. A summons was issued against one for breach of contract, but on promise to resume work, the case was not proceeded with. The men afterwards returned to their employment without any advance.

THE POLYTECHNIC INSTITUTION, REGENT-STREET.—This very useful institution has been somewhat remodelled under the active superintendence of the new resident manager, Mr. J. H. Pepper, whom many of our readers must already know as an able and pleasant lecturer at the Polytechnic. Amongst the numerous novelties now to be seen there, are M. Duboscq's experiments with the electric light, which we early brought under the notice of the public. These include the illuminated iridescent fountain, first exhibited in Paris.

STEAM SUPERSEDED.—An ingenious Swedish mechanician, Mr. P. Lagergren, has invented a new power engine intended to supersede steam. The moving force is the pressure of the atmosphere, which acts on a vacuum in a copper reservoir connected with two cylinders provided with pistons, as in a common steam-engine. The vacuum in the reservoir is produced by the admission of a certain quantity of alcohol and of atmospheric air each time the machine makes a stroke. Explosive air is hereby produced, is fired at each turn, and instantly burns away: one of the pistons being at the same time opened, an atmospheric pressure is obtained equal to 15 pounds on the square inch.

NEW CLUB-HOUSE, REGENT-STREET.—A general meeting of the members of the Junior United Service Club was held on Tuesday, to ballot for plans for the new house. Those submitted by Mr. T. M. Nelson were adopted. The new club-house is to occupy the site of the present house, at the corner of Regent-street, Waterloo-place, as well as the St. Alban's Hotel, in Charles-street, and the houses forming one side of St. Alban's-place.

ARCHITECTURAL EXHIBITION.—Permit me to correct an error into which one of your correspondents has fallen. At page 367, "An Architect," writing on the subject of the Architectural Exhibition, says, "The Architectural Association are now endeavouring to obtain a gallery and to establish an architectural exhibition." This is not the case. The Architectural Association having, in the spring of 1849 and in the autumn of 1850, organised and carried out free exhibitions of architectural drawings (held at the New Water Colour Gallery, Pall-mall), at a public meeting held in Lyon's-inn Hall shortly after the close of the Exhibition of 1850, handed the entire management of the enterprise over to a committee of the profession, which was then appointed for the purpose, and it is to the exertions of this committee to procure a suitable gallery that, I presume, "An Architect," intends to allude.—THE HON. SEC. OF ARCHITECTURAL ASSOCIATION.

PUBLIC WORKS.—The Board of Public Works are at present busily employed. The old mansion adjoining Lord Harrington's, in Whitehall, being prepared for the new Secretary at War, the mansion of the late Duke of Leeds, in St. James's-square, and lately occupied by Mr. Lane Fox, has been purchased for the Copyhold Department, the business of which has heretofore been carried on in Whitehall. It is in contemplation to surround the whole of Greenwich Park with an iron railing.—*Advertiser*.

NEW BAPTIST CHAPEL.—The foundation-stone of the new Baptist chapel, Stratford-grove, Essex, Mr. A. Trimen, architect, was laid on the 6th inst. by Mr. Alderman and Sheriff Wire. The Rev. Dr. Angus gave the address, and the Rev. S. Davis, of Bow-road, offered prayer. In the evening a public meeting was held at Rokeby House, at which Mr. Alderman Wire presided, and the Revs. T. E. Stallybrass, B.A. G. W. Fishbourne, pastor, W. Deering, S. Murch, J. Hooper, and J. Woodward took part in proceedings. An additional sum of between 50*l*. and 60*l*. was promised towards the new chapel.

REPORT ON PUBLIC-HOUSES, &c.: OPENING OF PUBLIC INSTITUTIONS ON SUNDAY. — The select committee of the Commons appointed to examine into the system under which public-houses, dancing-saloons, coffee-houses, theatres, and places of public entertainment, are sanctioned and are regulated, have agreed to their report, and placed it before the House. The committee recommend a more stringent system of licensing for public-houses, and the closing of them further on Sundays and at night on week days. In respect to other places of public resort and recreation on Sundays, they state that they think it "expedient that places of rational recreation and instruction, now closed, should be open to the public on Sunday afternoons, at the hour of two o'clock; and that so far as any such places are now closed by the operation of the law, such laws should be so far amended as to enable the Lord Chamberlain, or other competent authority, to determine what places should be permitted to be so opened and for what length of time." They allude to the great advantages that had been derived by the public of Dublin, in consequence of the Zoological Society, in the Phœnix-park, being opened for 1d. admission on Sundays; and remark upon "the inconsistency that suffers the singing saloons of Manchester and Liverpool, and Cremorne and the Eagle Tavern-gardens, to be open on the Sunday, and shuts, in the face of all but the proprietors and those who have free admission, the gardens of the Zoological Society, and the vast and varied school of ocular instruction provided within the grounds and building of the Crystal Palace," as "too glaring for continuance." But there are other places of public instruction, they observe, the complete closing of which throughout Sunday seems less excusable, viz. the National Gallery, the British and Geological Museums, and the exhibitions at Marlborough and Gore Houses. It is seldom possible, they remark, for working men, or any considerable part of the fully employed population, except on Sunday, to visit the national institutions without the cost, to them a serious one, of a day's wages. The committee are not aware of any serious difficulty in the way of a register of persons willing to serve on Sundays at such places being kept at the several institutions, and it would not even be needful, they add, that the same persons should attend on consecutive Sundays.

TRIPE BOILERS.—It may be as well for the tripe boilers, not only in Rosamon-street, Clerkenwell, but in the other parts of London, to look at our notice on another page of the London Smoke Act.

ECCLESIOLOGICAL SOCIETY.—At committee meetings of this society, lately held, an application from the Bishop of Brechin about St. Paul's Church, Dundee, was considered, and also the proposed rebuilding of the nave of the Priory Church of New Shoreham. The designs for the enlargement and restoration of St. Chad's, Stafford, by Mr. Ward, were examined. They showed the curious discovery of complete arcades, surmounted by clerestory windows of Romanesque date, embedded and concealed in the present side walls of the nave. It was agreed to advise that these remains should be preserved as far as possible, but that the new work required in the church, and especially the east end of the chancel, should be restored in the Pointed style, in accordance with the remaining buttresses and other details. A sub-committee was appointed to draw up a memorial to the Chief Commissioner of Works in support of the principles advocated in the architect's report on the restoration of the royal tombs in Westminster Abbey.

ST. GEORGE'S HALL, LIVERPOOL.—This magnificent hall is now rapidly approaching completion, and already the public are enabled to form a tolerably accurate idea of its vast size and architectural beauty. Externally it is almost finished, the greater portion of the terraces being flagged over, the broad stone steps perfectly arranged, and in a few days the workmen will have fixed the whole of the stone balustrade which surrounds the hall, as well as the massive double-columned granite pillars which stand at the bottom of the steps opposite the portico, and at that portion of the inclosure where the handsome bronze gates are to be erected. Huge blocks of stone, portions of granite pillars, massive flags, and vast pieces of timber, still cumber the ground, but soon they will be removed, and the noble area in front being cleared, the greatest architectural ornament of our town will stand revealed in all its grandeur. Internally, the numerous workmen daily occupied in the building are rapidly bringing their duties to a conclusion. The beautifully-arranged mosaic floor is nearly completed, and adds greatly to the general magnificence of the hall. It may be described as consisting generally of three circular devices, the central and larger one having its interior compartment occupied by a brilliantly executed emblazonment of the royal arms, surrounded by annular designs, conspicuous among which are a series representative of Neptunian and commercial triumph, executed in yellow and brown encaustic, exterior to which are rings of geometric design in brilliant colours. To the north and south of this central design there are subordinate figures of similar form, the centres of each being occupied by the shield and arms of Liverpool, also in brilliant colours. Exterior to the circles, the floor is tesselated in comparatively sober tones of colour, so arranged as to form a harmonious internote with the bright and telling tints predominating in the narrow or raised platform which surrounds the principal floor, and cuts it off from communicating with the walls. The whole of the galleries are being cleared and painted, and the seats for the spectators placed wherever practicable, though many of them will be evidently useless for those who wish to see what is going on in the body of the hall.—*Liverpool Times*.

SICKNESS.—At the last ordinary meeting of the Institute of Actuaries, a paper was read entitled "Observations upon the Sickness and Mortality experienced in Friendly Societies," by Mr. Henry Tompkins, wherein it was stated that the duration of sickness was in the inverse ratio to susceptibility of attack, as shown in the proportion of persons attacked with sickness. Thus, in the northern parts of England nearly 20 per cent. were yearly attacked with illness, while in the midland districts 30 per cent. were so attacked; but, on the other hand, the proportion of sickness to each sick man in the north amounted on the average to fifty days, while in the midland districts it reached only to thirty-six days; the liability to attack being balanced by the duration, thus making very little difference in the amount of sickness experienced in one part of England when compared with another. The report divided labour into two classes, viz. light labour and heavy labour, and each of these again into the two sections—labour in the open air and labour under shelter; and the results showed a great difference in their ratios of sickness and mortality. The most healthy condition of existence appeared to be "light labour in the open air."

THE LATE STRIKE AT BLACKWALL.—On the 14th, several summonses on assault charges, arising out of the strike at Mr. Mare's establishment, were heard at the Thames Police Court. In consequence of Mr. G. Wyatt, a confidential person in Mr. Mare's employment, having gone to his native town, Plymouth, and brought to town 100 shipwrights, who were employed by Mr. Mare, he had been exposed to much annoyance, and had run the risk of being killed by a missile which narrowly escaped striking him on the temple and seriously injured him. Mr. Mare had offered 20*l*. reward for the discovery of the aggressor, but as yet without success. Three workmen, however, were summoned for other assaults and threats against Mr. Wyatt, and two of them were fined 3*l*. each or one month's imprisonment, and the third ordered to find bail of 10*l*. to keep the peace and be of good behaviour.

WROUGHT IRON FRAMES.—Mr. James Boydell, of Gloucester-crescent, Hyde-park, has invented a method of rolling wrought-iron bars with longitudinal groove at each end suitable for the sliding in of panels of glass or other material; and in order to make them into the proper form for the uprights of the frame of a hand-glass or other such articles, he further rolls them so as to bend into angle-iron.

GILTSPUR-STREET PRISON SITE.—The Corporation of Christ's Hospital have memorialized the City Corporation for the disposal to them of the Compter in Giltspur-street, to make way for an enlargement of the hospital, and for which they have offered 15,000*l*., or agreed to refer the question of value to the surveyors of the two corporations. The City Corporation, while refusing these offers, have referred the matter to the Committee of City Lands that a farther opportunity of negotiating might be afforded. Mr. Cox, one of the City Corporation, said, during the discussion as to this reference, that he would be happy to give 10,000*l*. more than the offered sum, and was sure the property could be disposed of to vastly greater advantage.

THE MONUMENT TO THOMAS HOOD, by Mr. Matthew Noble, erected in Kensal-green Cemetery, was inaugurated on Tuesday, the 18th, when an able address was delivered by Mr. Monckton Milnes, M.P.

ST. MARY'S HOSPITAL, PADDINGTON. — The foundation-stone of a new building, intended for a medical school, in connection with the above hospital, was laid on 12th inst. by Earl Manvers, president of the institution. The building is intended for the reception of 200 medical students. The locality is on the west end of the hospital, with which it will correspond in architectural style. The estimated cost will be 5,000*l*. The architect is Mr. T. H. Wyatt.

TENDERS

Delivered at the Court-house, St. Marylebone, for roads, drains, and sewers, to be formed at the St. Marylebone Cemetery, Finchley.

	Gravel found by Contractor.	Gravel dug on Estate.
	£ s. d.	£ s. d.
F. Molton	4,265 0 0	
Fraser		4,177 5 11
Phillips	4,412 0 0	4,052 0 0
Glenn	3,486 0 0	3,220 0 0
Wm. Norris	3,647 0 0	3,527 0 0
Pound		4,358 0 0
J. Culverhouse	3,255 0 0	2,922 0 0
Messrs. Culverhouse	3,230 0 0	2,897 0 0
Higgs and Cullingford	4,393 0 0	4,075 0 0
Maynard and Knight	4,295 15 0	3,979 7 0
S. and R. Eustace	4,596 0 0	4,431 0 0
G. Rodgers	3,682 0 0	3,482 0 0

[There was another tender (from Mr. Johnson) more than double in amount the highest of these, but as this was apparently founded on some error, we have omitted it.]

For erecting twenty-two houses at Yates-grove, Earl's-court, Brompton. Mr. W. Moxon, architect.

Mackenzie	£17,550
Ashby and Sons	16,950
Myers	16,460
Taylor	13,158

For the erection of a pair of semi-detached villas in Ravensbourne-park, Lewisham. Mr. T. W. Constantine, architect. The quantities supplied by Mr. H. T. Northcroft.

R. Smith	£3,000
J. F. Sergeant	2,953
J. Marsland	2,875
J. and G. Wrigglesworth	2,740
S. Wilson	2,650
W. Paull	2,645
J. Trevers, jun.	2,637

TO CORRESPONDENTS.

"H. and R." "G. W." "J. B." Islington (the Palm-house at Kew has been illustrated in our pages), "A Subscriber," "E. B." "R. G." "W. O." "H. D." "H. B." "T. C." "J. C." "Police-courts," "D. M." "Old Gardens," "J. J. M." "Archi" (shall appear), "J. L." "J. P." (under our mark), "F. C." (ditto), "A. B." (ditto), "S. S. T." "H. S." "R. J. H." "A. P. H." "T. W." "J. F." "J. B." Greenwich, "J. S. P." "T. B." "J. K. C." (unnecessary: adds nothing to the argument), "W. P." "W. C. T." "J. B." (London), "W. M. C." "S. H." (thanks).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.